3.0 Overview of Public Process and Key Issues Raised

3.1 Traffic Management Plan Planning Process

The Traffic Management Plan Planning Process was designed to allow public participation and public input to drive the development of the Traffic Management Plan, including:

- Discussion and validation of the goals of the Traffic Management Plan;
- Identification of issues to be analyzed, both citywide and at specific locations;
- Agreement regarding the types of traffic analyses to be performed via education and discussion of appropriate methods;
- Validation of the issues raised via explanation and discussion of the traffic analysis results;
- Discussion of the types of actions that can be taken to promote transit, bicycle and pedestrian travel, create more livable streets, and calm automobile traffic;
- Discussion of the costs of these actions and their implications for environmental clearance;
- Discussion of the proposed implementation measures, and identification of costs, prioritization and phasing;
- Discussion of future implementation programs and ongoing monitoring.

All work performed in drafting the Traffic Management Plan was accomplished with the goal of addressing issues raised by all who participated in the public process.

The Traffic Management Plan Planning Process includes the following elements:

- Task 1.0 Community Consensus Process/Convene Neighborhood Working Groups
- Task 2.0 Identify Existing Conditions and Review Existing Studies, Plans and Projects; Complete Data Collection
- Task 3.0 Conduct Traffic Analysis and Prepare Preliminary Draft Plan; Present Findings to Traffic and Safety Commission
- Task 4.0 Consensus Building on the Preliminary Plan Via Neighborhood Working Group Meetings and Citywide Open House
- Task 5.0 Traffic and Safety Commission Public Hearing
- Task 6.0 Finalize and Present Traffic Management Plan to City Council for Action

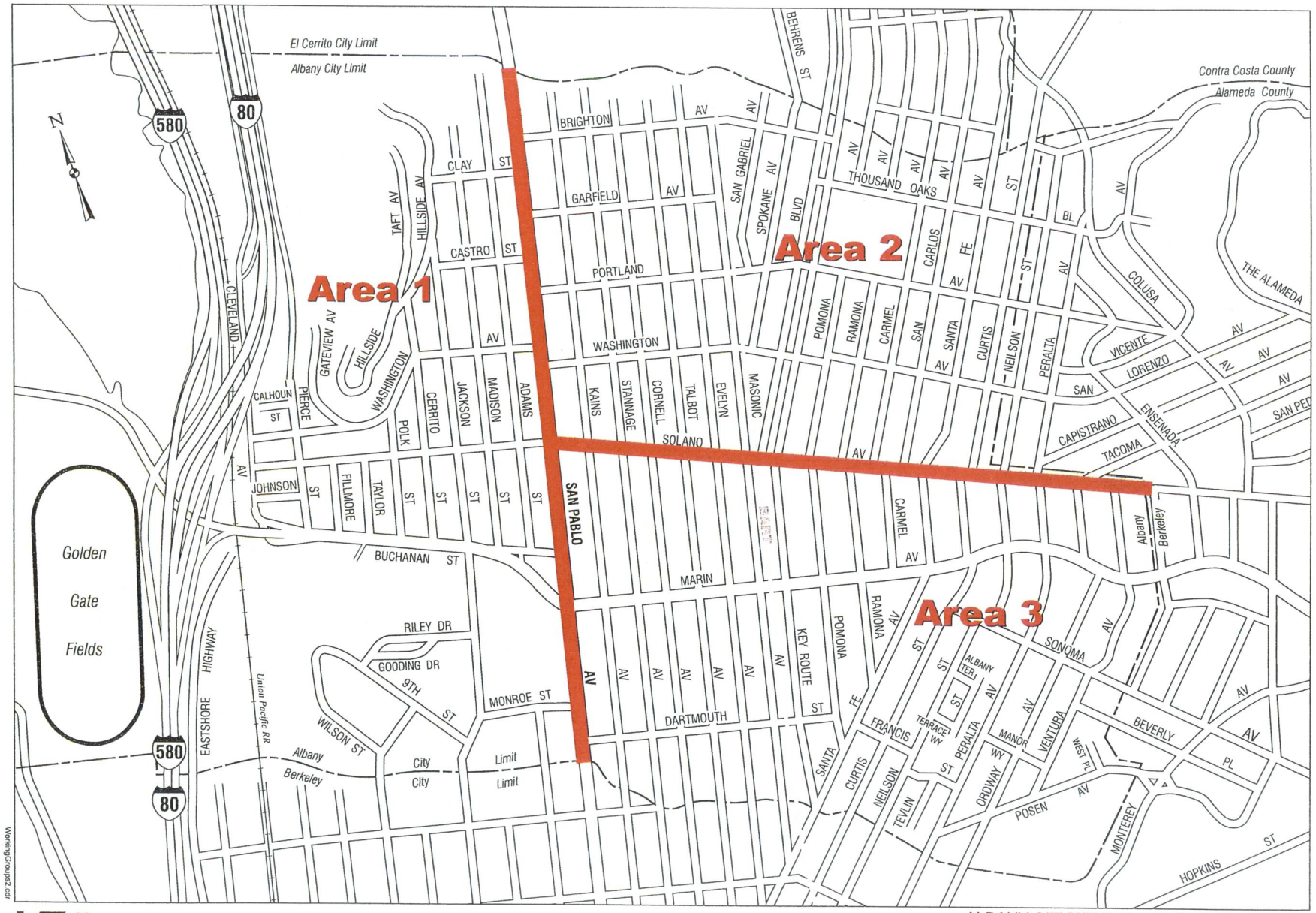
3.2 Public Process

Introductory Public Meeting

The Introductory Public Meeting was held on February 26, 1998, at the Albany Community Center, and was conducted in a hands-on, workshop format. Approximately 46 people attended. Participants gave input to citywide issues and neighborhood issues, marking up maps at stations representing each of three designated Neighborhood Areas and citywide. Intensive input on specific issues were gathered, and volunteers participated in the smaller, on-going neighborhood working groups for each Area. (See *Figure 3.1, Neighborhood Working Group Area Map*, for the boundaries of each designated Area.)

Community Consensus Building in the Citywide and Area Working Groups

There were a total of twenty Neighborhood Working Group and Citywide Working Group meetings, which comprise the consensus building process of the Traffic Management Plan. Table 3.1, Working Group Meeting Schedule and Activities shows meeting dates, number of participants, purpose of meetings, and accomplishments for the meetings.



WorkingGroups2.cdr

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Figure 3.1

NEIGHBORHOOD WORKING GROUP AREAS

Table 3.1 Working Group Meeting Schedule and Activities

Neighborhood Area	Meeting Dates	Number of Participants	Purpose of Meetings	Accomplishments
Area 1 Area 2 Area 3 Citywide	3/23/98 3/25/98 3/30/98 4/01/98	12 * * 12	Refine and expand upon input received at the Introductory Public Meeting.	Handouts detailing initial input were refined and expanded upon, and future data collection efforts were discussed with residents.
Area 1 Area 2 Area 3 Citywide	6/29/98 7/01/98 7/06/98 7/08/98	12 * 12 12	Provide detailed descriptions of each neighborhood and citywide issue, and the data collection and analysis used to validate each issue.	Detailed graphical handouts describing each location, issue, data collection/ analysis and major findings were discussed and refined. Any additional data needs were identified.
Area 1 Area 2 Area 3 Citywide	7/27/98 7/29/98 8/03/98 8/05/98	2 * 8 5	Discuss how to prioritize valid issues, describe traffic calming and other policy options, their general costs and phasing, and their prospects for environmental clearance .	Handouts were provided that proposed a method for prioritizing actions on each issue validated through data analysis; an example for its application in each Area was provided. Potential traffic calming and other citywide policies and programs were discussed in detail with residents.
Area 1 Area 2 Area 3 Citywide	8/24/98 8/26/98 8/31/98 9/02/98	8 * 4 4	Discussed overall elements of the Traffic Management Plan with residents for their informal comment.	A general discussion of the costs, environmental constraints, and types of recommendations that could be proposed was held.
Area 1 Area 2 Area 3 Citywide	1/11/99 1/13/99 1/19/99 1/20/99	10 * 15 7	Discuss Draft Traffic Management Plan elements; receive input and build consensus on key Plan elements ; invite participants to testify at scheduled public hearings on the Plan.	Comments were received and recorded from the Commission and public to produce a new draft.

** Sign-up sheets are unavailable. However, these working group meetings were held and input was given.*

3.3 Issues Raised During the Public Process and Review of Relevant City Reports and Documents

There were over 150 issues identified at over 80 specific locations and citywide. These issues are described in detail in Appendix A, Profiles of Specific Neighborhood Issues. In addition, Appendix A contains:

- a description of the traffic data collected pertaining to the issues identified at each location; and
- major findings of the data analysis pertaining to each issue.

The study results for each of the neighborhood issues and citywide issues are discussed in Section 4.0, below. These results were used to assess the validity of each issue raised in the early meetings in the public process, where issues and data collection efforts were discussed and finalized. Issues which were validated through analysis of the pertinent traffic data were carried forward into the process described in Section 6.0, which provides detailed proposals for phased implementation actions and associated cost estimates designed to address issues and goals of the Traffic Management Plan.

3.4 Neighborhood Petitions Ordway Avenue and Dartmouth Street

In addition, petitions were received from residents of the 947-1000 Block of Ordway Avenue and Dartmouth Avenue regarding traffic conditions. On the 947-1000 Block of Ordway Avenue, residents provided a petition on August 3, 1998, which listed several concerns. Residents were concerned about child pedestrian safety, especially children playing on the sidewalk and sometimes inadvertently in the street. Residents noted that their street is a thoroughfare between Marin Avenue and Gilman Street, and is a major access route to St. Mary's College High School. As a result, residents observe that vehicles turning from Marin Avenue onto Ordway Avenue are doing so at high rates of speed. They were concerned that the vertical alignment of Ordway Avenue obstructs sight distance, and curb return radii are large at both ends of the block, which encourages turning at high rates of speed. The intersection of Sonoma Avenue and Ordway Avenue is seen as especially problematic, due to resident observations of late-night exhibition driving in the center of the intersection, and speeding cars turning from Sonoma Avenue onto Ordway. Residents requested STOP signs, speed tables, and narrowing corners as potential means of slowing traffic to conform to the speed limit on this segment of Ordway Avenue.

The City Council took an important first step in implementing Policy CIRC 1.7 that recommends the use of traffic calming methods to protect neighborhood streets. Working with interested residents, the Council directed staff to initiate the 900-946 Block Ordway Avenue Traffic Calming Demonstration Project. This project included striped curb extensions which visually narrowed the north leg of the intersection of Ordway Avenue and Marin Avenue. The project was designed to: 1) create better visibility for vehicles traveling southbound on Ordway Avenue to westbound Marin Avenue by moving the STOP sign and STOP bar, and 2) reduce speed for

vehicles traveling eastbound on Marin Avenue to northbound Ordway Avenue. The project is designed for better visibility and better safety at the intersection of Ordway Avenue/Marin Avenue.

Following implementation of this channelization demonstration project, Korve Engineering reviewed its effectiveness in reducing vehicle speed. "Before" speed survey information conducted by Thompson Traffic Engineers (TTE) in December 1997, "after" speed survey conducted in August 1998, and a field review was used by Korve staff in this review. They found that the channelization had limited effectiveness in reducing vehicle speed mid-block, as shown below.

85th Percentile Speed
Ordway – Between Solano and Marin

	SB	***NB***
1997 (before)	29.5	31.5
1998 (after)	26.5	28.5

SB = Southbound
NB = Northbound

Korve concluded that this was not surprising since the channelization is located at the intersection rather than mid-block where "chokers" or other speed reduction devices are most effective. The channelization did appear to reduce the effective width of Ordway and consequently reduce the radius of vehicles turning into and out of Ordway Avenue. Korve Engineering concluded that the intersection approach is quite wide and would work better if it were reduced by about 10 feet. They further recommend that the painted channelization be replaced by a raised curb in order to enhance driver visibility of the channelization. Narrower curb returns would also decrease the distance pedestrians need to cross Ordway Avenue since the painted channelization does not provide a safe haven for pedestrians.

For speed reduction on Ordway Avenue itself, Korve Engineering recommends that one or more speed tables be installed mid-block. This measure was originally suggested by TTE as an alternative measure if the pavement delineation was not effective. Lastly, other mid-block traffic calming devices from the traffic calming toolbox, such as mid-block chokers, could also be used.

On August 8, 1998, a petition from residents of Dartmouth Street was received. Residents expressed their concern that Dartmouth Street is being used as a thoroughfare and that little of the traffic is local. They expressed concern that traffic volumes and origin/destination data for vehicles were not collected on Dartmouth Street. Residents therefore are concerned that any traffic controls established on Gilman Street and on Marin Avenue could adversely affect the deteriorated safety and environmental conditions on Dartmouth Street.

Input from residents of these streets and others were gathered throughout the public process. Generally, if issues raised were by residents in the public process prior to the data collection effort in April, 1998, data regarding these issues was gathered and results reported in Appendix A of the Traffic Management Plan. Recommendations were made where these data gathering results confirmed specific resident issues raised. For locations and issues identified by residents after the data gathering effort was authorized and begun in April, 1998, recommendations are also provided wherever field checking or other information was available to confirm resident concerns.

4.0 Summary Results of Citywide Data Collection and Analysis

4.1 Data Collection Program

City staff provided relevant City reports, plans, projects and other documents, as well as past Traffic and Safety Commission minutes and correspondence, to KORVE Engineering for review; issues included in these documents were also listed as issues to be investigated in the study. City traffic policies were noted, and relevant data were also retrieved for use in documenting existing traffic conditions.

After compiling an exhaustive matrix of issues and locations to be studied and data required to address the issues raised via the public process and review of relevant documents, it was determined that a cost-effective data collection program would be necessary. As it was seen as impractical and prohibitively expensive to collect every type of datum throughout the city, a reasonable and feasible data collection program was developed

Data collection began in mid-April 1998 and continued through mid-May 1998; all traffic counts, car following, parking counts, observations of traffic conditions, and speed studies (except those that were added after the June public meetings) were performed prior to Solano Avenue construction. Observation of schools and sight distance field observations were completed by mid-May. Data collection was documented and placed into graphical format from mid-May through June, 1998. All detailed data collection efforts, data collection results, and major findings, are described for each issue studied in Appendix A, Profiles of Specific Neighborhood Issues.

The following data collection methods were employed at various locations throughout the City where appropriate:

- Radar speed studies
- Average Daily Traffic (ADT) counts
- Vehicle turning movements
- Pedestrian crossing movements
- Bicycle movements
- Statewide Integrated Traffic Records System (SWITRS) accident data analysis
- Videotaping at selected locations (e.g., at schools)
- Field Observation (e.g., sight distance observations)
- Car Following (on Cleveland Avenue near Solano Avenue) [16]

Data collection locations and results are shown on maps in this Section of the report (*Figures 4.1* through *4.7*).

[16] "Car Following" refers to a technique of determining origin/destination and path of travel for vehicles within the City. In this case, vehicles entering the residential neighborhood from Cleveland eastbound were followed by the researchers via automobile, and their route and destination were observed.

4.2 Citywide Data Collection Results

All of the studies conducted by KORVE Engineering and compiled from existing data sources were focused on specific issues raised by the public, decision makers, and documents provided by the City, as noted above. The following sections summarize the data collected and provide overall comments on the major categories of issues expressed by the public.

4.2.1 Issue: Vehicles Exceeding the Speed Limit on City Streets

Figure 4.1, AM/PM Peak Vehicle Speeds, shows the results of vehicle speed studies. *Figure 4.1* indicates at what speed the 85th percentile of all vehicles on a given roadway were traveling in the AM and PM peak hour. Essentially, 84 percent of all vehicles are traveling slower than the 85th percentile speed, and 15 percent of all vehicles are traveling faster than this speed. It has been shown that reasonable drivers perceive the 85th percentile speed as the speed the roadway was actually designed to accommodate—regardless of the posted speed limit. Traveling at this speed is in the "comfort zone" of most prudent drivers.

In the City of Albany, for the vast majority of streets where residents indicated that vehicles exceeded the speed limit, radar speed studies found that the observed 85th percentile speed indeed did exceed the posted speed limit. Of all of the City streets where speed studies were conducted, only San Pablo Avenue and Solano Avenue exhibited 85th percentile vehicle speeds at the posted speed limit. The posted speed limit on San Pablo Avenue, during the vehicle speed studies, was 35 mph; it has since been reduced to 30 mph. On all other streets in the City, the posted and/or prima facie speed limit is 25 mph, except at the crest of Solano Avenue between Cerrito and Taylor Streets and at the crest of Peralta Street between Marin and Sonoma Avenues, where the posted speed limit is 15 mph.

The speed survey data in *Figure 4.1* indicates that 85th percentile vehicular speeds on the following streets exceeded 6 mph over the posted speed limit (32 mph or higher) in at least one direction during the AM or PM peak hour:

- Buchanan Street
- Cleveland Avenue north of Washington Avenue
- 900 block of Pierce Street
- Marin Avenue
- Santa Fe Avenue south of Marin Avenue
- Curtis Street south of Marin Avenue
- Pomona Avenue south of Marin Avenue
- Sonoma Avenue
- Peralta Avenue south of Marin Avenue
- Ordway Avenue south of Marin Avenue
- Brighton Avenue west of Masonic Avenue

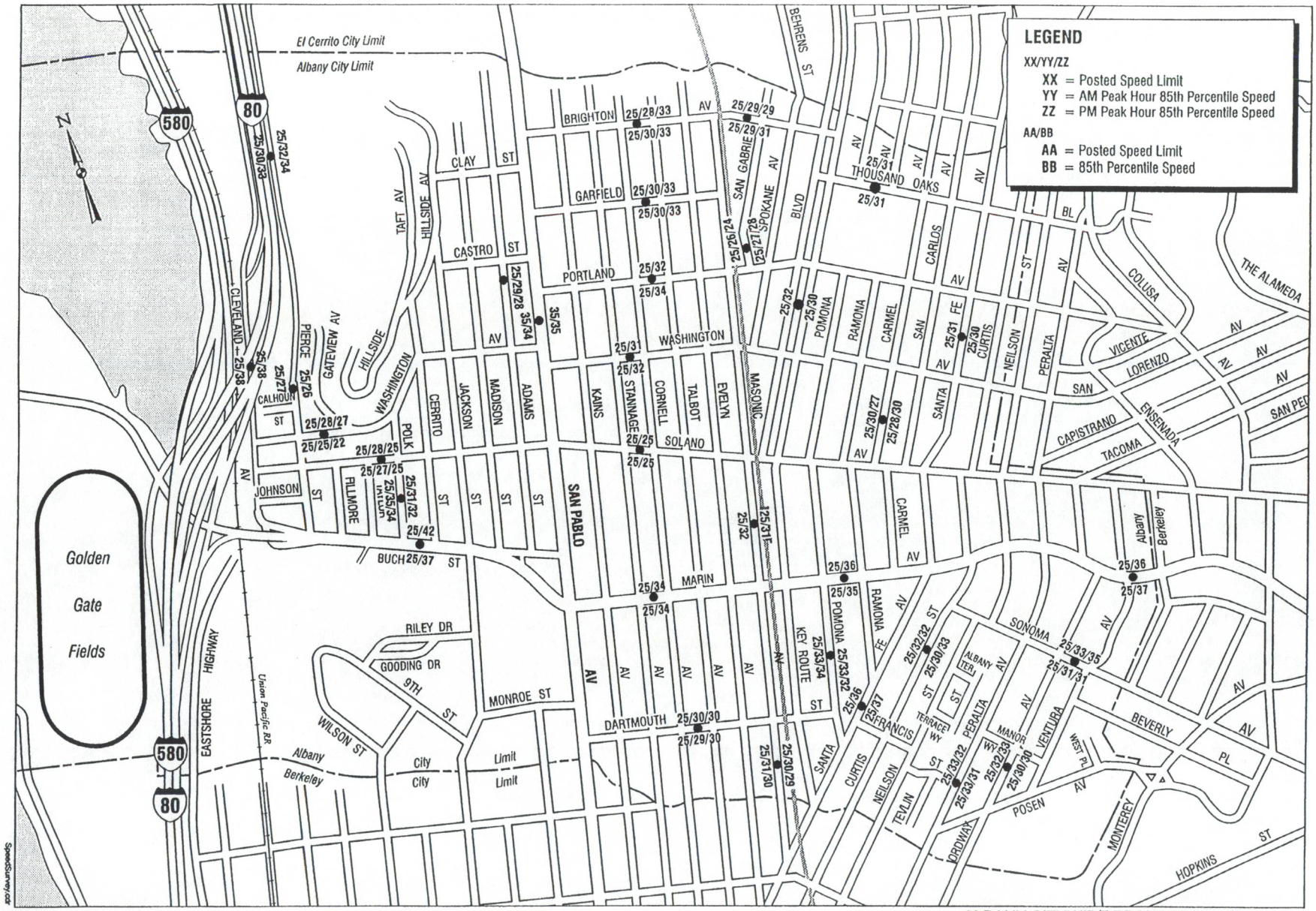

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Figure 4.1

AM / PM PEAK VEHICLE SPEEDS

- Garfield Avenue west of Masonic Avenue
- Portland Avenue west of Masonic Avenue
- Washington Avenue west of Masonic Avenue
- Masonic Avenue just north of Marin Avenue
- Key Route Boulevard south of Portland Avenue

General types of roadway conditions in the City of Albany which contribute to vehicles exceeding the speed limit include:

- Roadway widths designed to carry vehicles at higher speeds than the posted speed limit (this is most evident on Buchanan Street and on Marin Avenue, and on other residential streets such as Masonic Avenue and Santa Fe Avenue);

- East-west streets configured in a grid pattern north of Solano Avenue which are STOP sign controlled at all north-south approaches, inviting the possibility of both local and through commuter traffic cross-cutting neighborhood streets to the City of Berkeley, either traveling on through routes such as Washington Avenue and Portland Avenue, or turning onto Masonic Avenue or Key Route south to Marin Avenue.

- North-south streets are configured with long blocks and in some cases generous street widths. In the southeastern edge of the City south of Marin Avenue there is significant observed speeding on north-south blocks such as with long blocks (for example, Santa Fe Avenue and Ordway Street). Sonoma Avenue is an east-west street in this area of the city which is STOP sign controlled at all north/south approaches and therefore parallels Marin Avenue as a direct through route out of the City of Albany into Berkeley.

As noted at the beginning of this section, on all but two streets (San Pablo Avenue and Solano Avenue) where residents identified concerns with speeding, vehicles generally exceeded the speed limit at the 85th percentile of observed speeds.

4.2.2 Issue: High Average Daily Traffic Volumes on Residential Streets

Figure 4.2, Daily Traffic Volumes, documents the Average Daily Traffic Volume (ADT) on major and minor arterials, collector and local streets. Wherever traffic volume was identified as an issue in the public process and the document review, ADT was counted.

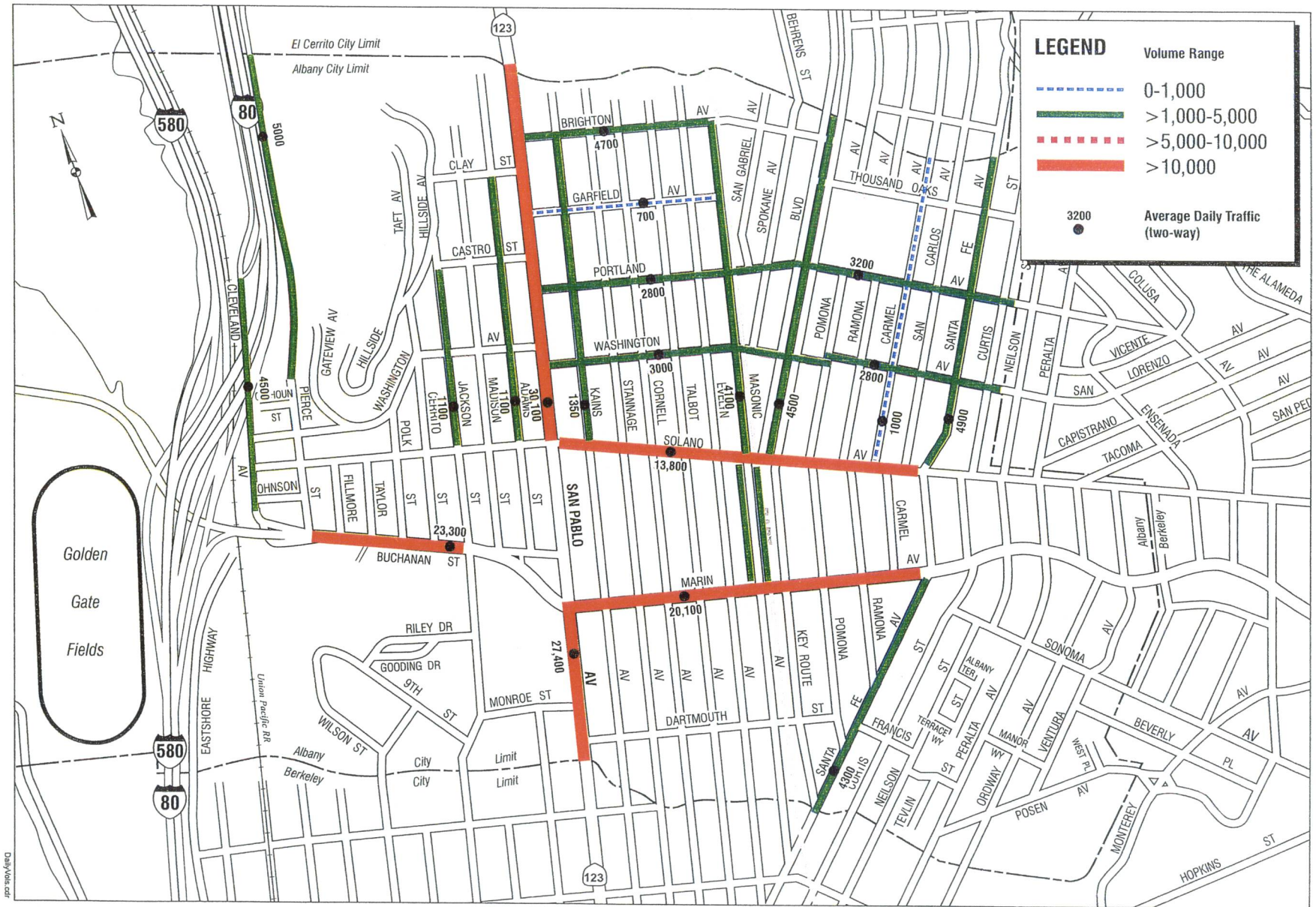

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Figure 4.2

SELECTED DAILY TRAFFIC VOLUMES

In order to evaluate the volumes shown in *Figure 4.2*, it is necessary to have a point of comparison. The Circulation Element of the City of Albany General Plan has no formal standards for Average Daily Traffic volume on each roadway classification. For the purposes of this plan, the following volumes used in standard traffic engineering practices are considered to be maximum acceptable levels for each facility type:

- Major Arterial (Divided) 36,000 ADT
- Major Arterial (Undivided) 27,000 ADT
- Minor Arterial 18,000 ADT
- Collector 10,000 ADT
- Local Street 2,000 ADT

Divided Major Arterial Streets in Albany are Buchanan Street and San Pablo Avenue. Undivided Major Arterials include Marin Avenue and Solano Avenue.

Minor Arterials are: Masonic Avenue south of Solano Avenue, Cleveland Avenue north of Solano Avenue, Pierce Street, Jackson Street between Solano Avenue and Buchanan Street, and Key Route Boulevard north of Solano Avenue. (No data was collected for the minor arterial segment of Buchanan Street west of I-80.)

Collectors are: Jackson Street north of Solano Avenue, and Santa Fe Avenue, Portland Avenue, Thousand Oaks Boulevard, and Brighton Avenue.[17] Where data was available, 41 streets were found to carry less than the maximum acceptable for each facility type.

All other streets in Albany are considered local streets. The only local street where the threshold is exceeded is Washington Avenue from San Pablo Avenue to the Berkeley City Limit. While the local portion of Washington Avenue east of San Pablo Avenue is discontinuous with the collector street segment west of San Pablo Avenue, it is nevertheless a desirable through route for local neighborhood residents and for crosscutting traffic since it connects directly with San Lorenzo Avenue and The Alameda in the City of Berkeley. It therefore appears to be functioning as a collector and/or minor arterial in the segment east of San Pablo Avenue, despite its local street designation at this location.

The criteria for acceptable levels of traffic on streets with different functional classifications is intended to reflect both the traffic-carrying characteristic and the need to serve as means of access to private property and to promote the quality of "livability" on local, and to an extent, collector streets. The evaluation of ADT indicates that, for the most part, the City's streets are carrying volumes consistent with their classification.

[17] No ADT data collection was requested for Solano Avenue west of San Pablo Avenue, and for Peralta Avenue since neighborhood issues regarding traffic volumes on these streets were not identified as significant issues in public meetings prior to the data collection effort authorized in April, 1998.

In relating the ADTs to "livability," one street that stands out as a possible problem is Marin Avenue. It is designated as a major arterial, but it is largely residential in character. It is the only functional arterial for through traffic within a mile on either side (Solano Avenue functions largely as a means to access the commercial center of the City) and traffic is naturally attracted to the street as a means of entering and leaving much of Albany and portions of Berkeley. The major arterial street designation is a means for the City to reinforce the valuable traffic-carrying function of this street.

4.2.3 Issue: Pedestrian and Bicyclist Safety/Accident Analysis

Four types of data collection efforts were undertaken in order to analyze pedestrian and bicycle safety.

1) At specific intersections where pedestrian and bicyclist safety was cited as an issue, pedestrian volumes by direction of travel and bicycle turning movements were collected, as well as vehicular turning movements. The critical opposing movements between bicyclists and vehicles and pedestrians and vehicles were analyzed for each location as outlined in the detailed data analyses for each neighborhood location in Appendix A.

2) Observation of pedestrian and bicyclist behavior was made at several locations, including school crossing locations; these analyses are also discussed in detail in Appendix A for each location.

3) Pedestrian crossing times at signalized intersections were analyzed for safety and ease of crossing, especially for children, at each location where this issue was identified; these analyses are discussed in detail in Appendix A for each specific location.

4) State Wide Integrated Traffic Records System (SWITRS) accident data provided by the City were analyzed in detail for reported pedestrian and bicycle incidents. Accident data are discussed in detail in Appendix A for each specific location identified for analysis. Table 4.1 documents all accidents, including bicycle and pedestrian accidents, and compares the observed accident rates to "expected" rates for these locations.

Generally, residents were concerned that pedestrian and bicycle crossings were particularly difficult on Marin Avenue and Buchanan Street near schools, and that all pedestrians, including children and the elderly, found several locations on San Pablo Avenue, Marin Avenue, and some locations on Solano Avenue difficult to cross because of signal timing concerns. Residents felt particularly concerned about pedestrian and bicycle travel due to traffic volume and speeds on Marin Avenue/Buchanan Street.

Analyses of specific issues and locations detailed in Appendix A indicate that pedestrian and bicycle movements were heavy at locations where residents indicated they were heavy (for example, the intersection of Marin Avenue /San Pablo Avenue). Concerns regarding pedestrian crossing times were validated in several locations.

An analysis of the signal timing at the various locations on both arterials indicated that the citizens' concerns with crossing times are largely related to the timing of the specific phases of the pedestrian signal. The pedestrian crossing signals consist of a certain amount of "Walk" time, an additional amount of flashing "Don't Walk" time, and a longer period of solid "Don't Walk" time. The signals should be timed so that any pedestrian leaving the curb under a "Walk" indication would have sufficient time to cross the street before the opposing traffic is released. "Walk" time is ideally set to allow a pedestrian, leaving the curb at the beginning of the "Walk" phase, to reach the middle of the street before the flashing "Don't Walk" appears; however, on wider arterials, this design objective often conflicts with the need to provide sufficient crossing time for those who begin crossing in the middle of the "Walk" phase. A review of pedestrian signal timing in Albany indicated that, while there is sufficient crossing time if the pedestrian leaves the curb when the "Walk" signal first occurs, there is not sufficient time if the crossing starts in the middle of the "Walk" phase.

Accident Data--a Citywide Snapshot of Pedestrian and Bicycle Safety Conditions

Documentation of pedestrian and bicycle safety conditions at intersections is available in the record of reported accidents contained in the SWITRS accident data files, which were provided by the City. Accident data were available for the period January, 1994 through September, 1997. The results of the analyses of these data are provided in the figures and tables which follow. *Figure 4.3, Accident Frequency*, provides the total number of vehicle, pedestrian, and bicycle accidents during the time period studied. *Figure 4.4, Accident Rates*, provides a comparison of accident rates per 1 million vehicles for each location in the City where accidents of any type were observed. Accident rates per 1 million vehicles is a standard method in traffic engineering for reporting accident data while controlling for the number of vehicles present on a particular roadway segment. *Figure 4.5, Bicycle and Pedestrian Accident Frequency*, provides the total number of bicycle and pedestrian accidents by location for the time period studied. *Figure 4.6, Bicycle Accident Frequency*, provides the location of each bicycle accident during the time period studied, and indicates whether the bicyclist or the driver of the vehicle was at fault. *Figure 4.7, Pedestrian Accident Frequency*, provides the location of each pedestrian accident during the time period studied, and indicates whether the pedestrian or the driver of the vehicle was at fault.

Bicycle and pedestrian accident rates are highest on San Pablo Avenue. This pattern is due to:

- numerous access points;
- mid-block turning movements;
- stop-and-go peak hour congestion;
- high on-street parking turnover.

As *Figure 4.5, Bicycle and Pedestrian Accident Frequency*, shows, there are more pedestrian and bicycle accidents on San Pablo Avenue than on any other street in the city. This is clearly related to the fact that San Pablo Avenue has the highest ADT in the City; one would expect more accidents of all types associated with more traffic on a particular street. San Pablo also has the highest accident *rate* per million vehicles than any other street in the City, at between 0.01 and 0.5 accidents/million vehicles. This is another explanation of more bicycle and pedestrian accidents on this street (see *Figure 4.4, Accident Rates*).

The location with the second highest number of pedestrian and bicycle accidents is Solano Avenue. This is partly a result of high ADT on Solano Avenue, which has the second highest ADT in the City. However, overall accident rates on Solano Avenue are not as high as on San Pablo Avenue. Overall accident rates on Solano Avenue are similar to those of several *residential* street segments, where accident rates range between 0.01 and 0.5 accidents per million vehicles.

Figure 4.4 shows that the main east-west streets exhibit similar accident rates to Solano Avenue for all types of accidents (between 0.01 and 0.5 accidents per million vehicles). These include Marin Avenue/Buchanan Street, and major portions of Portland Avenue, Thousand Oaks Boulevard, and Brighton Avenue. The main north-south streets exhibiting this moderate accident rate are Key Route Boulevard, Masonic Avenue, and Santa Fe Avenue. Some intersections on Washington Avenue and Dartmouth Avenue also exhibit this moderate rate of accidents.

Table 4.1 is a summary of observed and "expected" accident rates at all of the intersections illustrated in *Figures 4.4* and *4.5*. The "expected" rates are derived from the Basic Average Accident Rate Table for Intersections, on page 86 of the Caltrans 1996 Accident Data on California Intersections. This table allows a comparison of each location to statewide averages; it is designed so that locations with higher than average rates are highlighted. Totals for the major streets in the City are also provided. The table indicates that accident rates are above average on:

- Carmel Avenue (Washington Avenue to Thousand Oaks Blvd.)
- Cleveland Avenue (Solano Avenue to I-80 off-ramp)
- Buchanan Street (ramps to I-80)
- Pierce Street (Buchanan Street to Calhoun Street)
- Polk Street (Buchanan Street to Solano Avenue)
- San Pablo Avenue (Dartmouth Street to Castro Street)
- Stannage Avenue (Dartmouth Street to Washington Avenue)

Figures 4.6 and *4.7* illustrate that on those residential streets with accident rates between 0.01 and 0.5 accidents per million vehicles, bicycle accidents show concentrated patterns of occurrence. However, pedestrian accidents tend to be more randomly distributed at various intersections on residential streets in general than do bicycle accidents. The streets with a marked pattern of bicycle and pedestrian accidents are: Marin Avenue, Portland Avenue, Santa Fe Avenue, and Brighton Avenue. The residential street with the largest number of pedestrian and bicycle accidents is Marin Avenue, where bicycle accidents predominate.

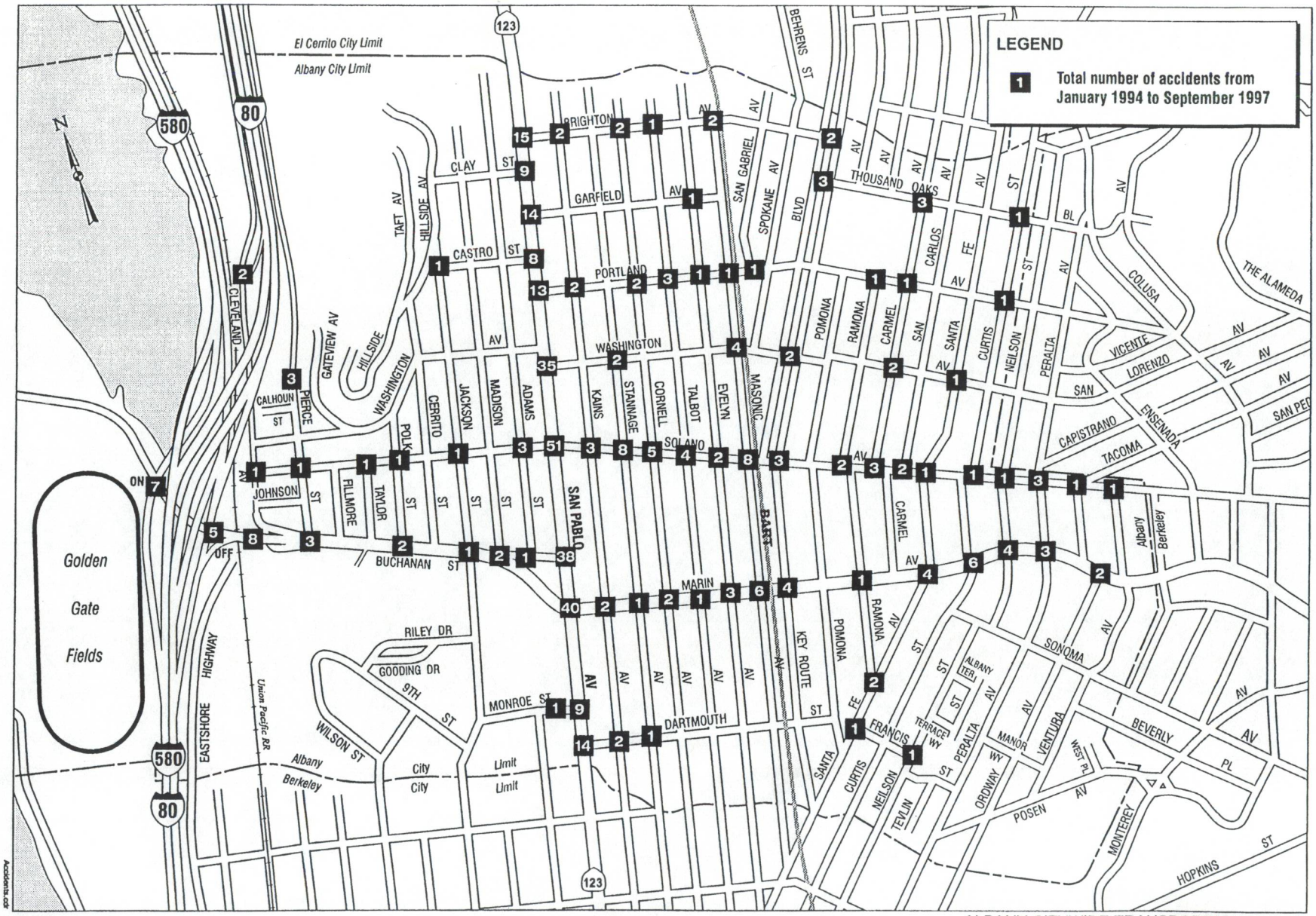

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Figure 4.3

ACCIDENT FREQUENCY
(All Accidents)

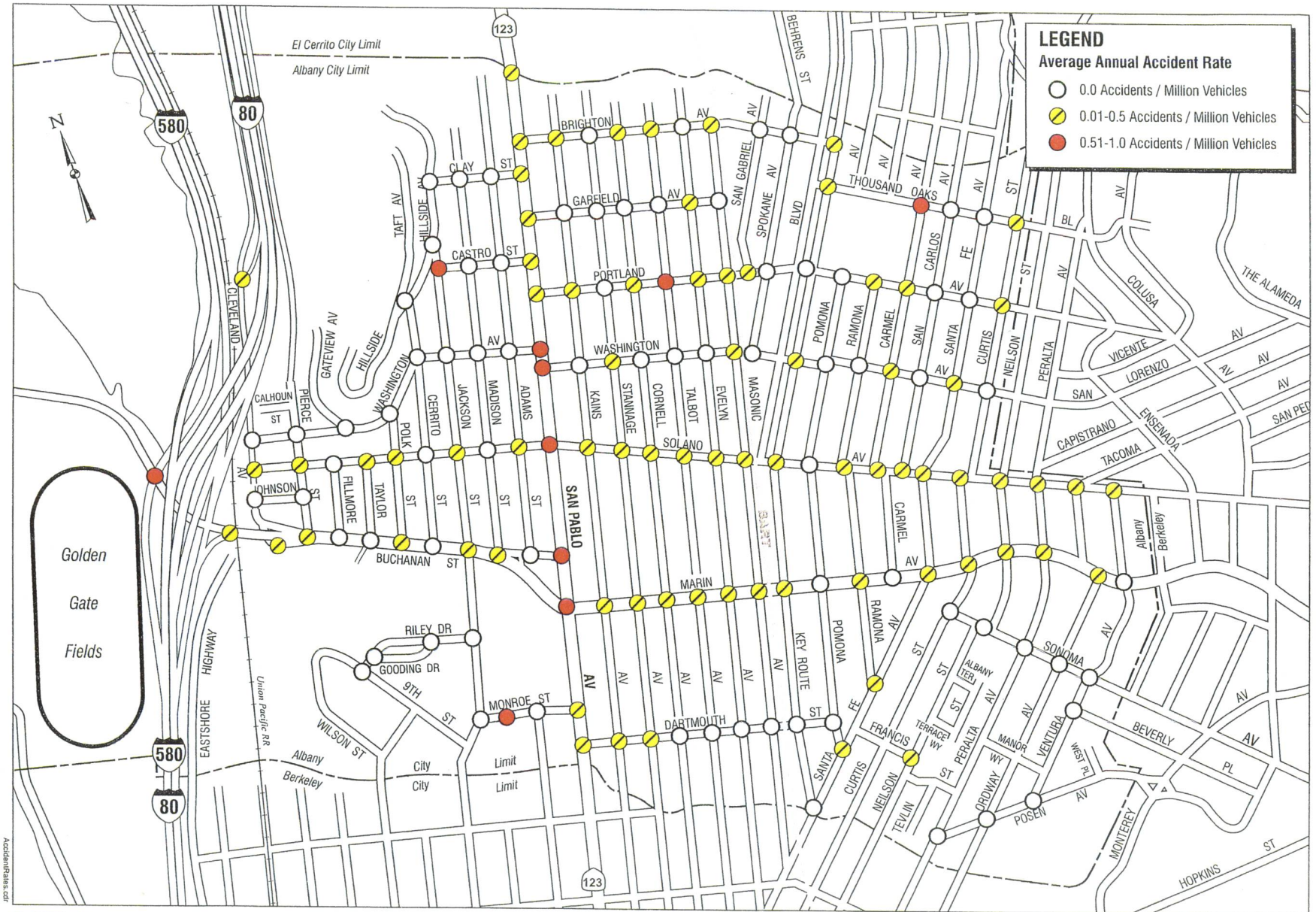

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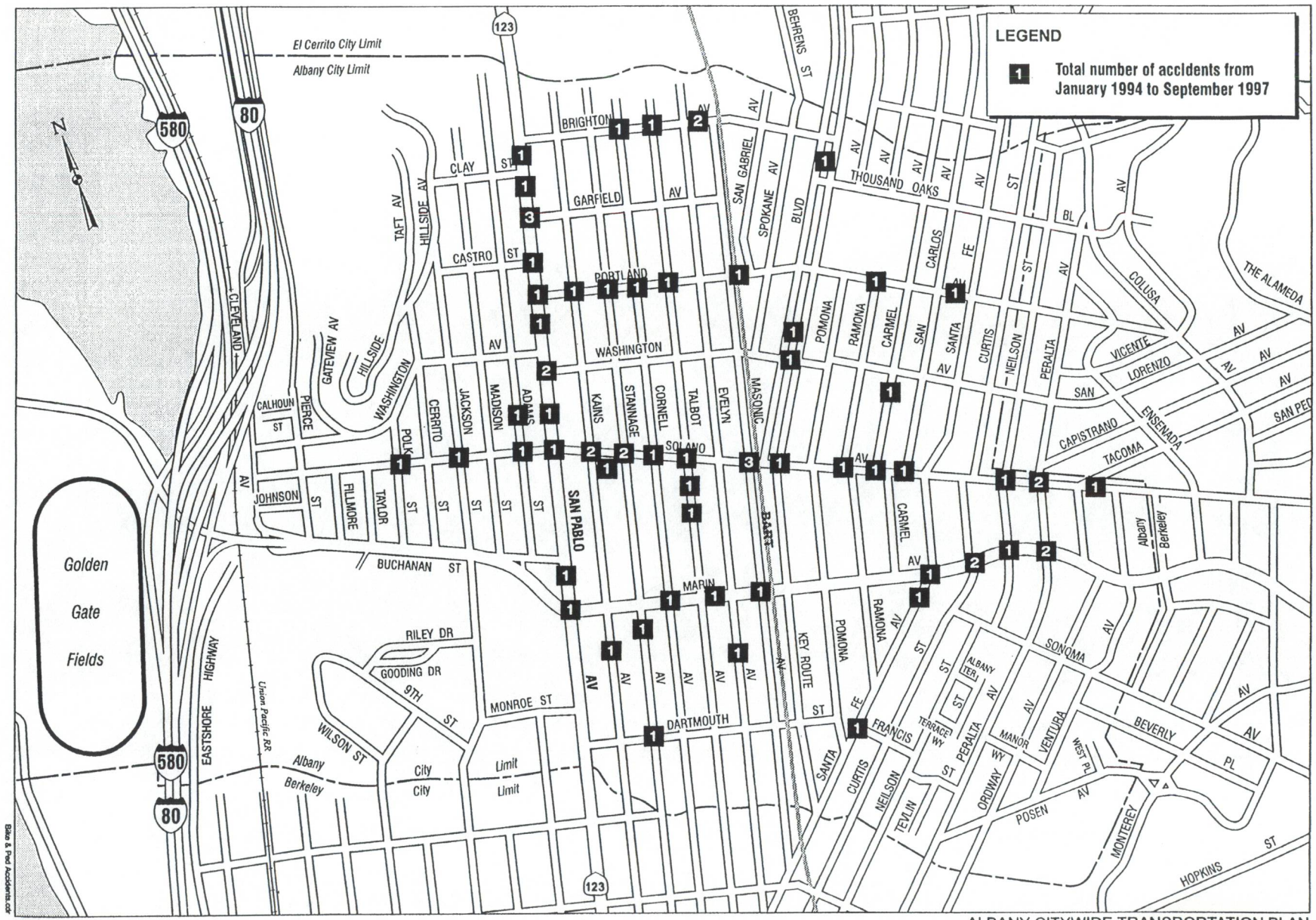
Figure 4.4

ACCIDENT RATES

(All Accidents)



Bike & Ped Accidents.cdr

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Figure 4.5

ACCIDENT FREQUENCY

(Bicycle Accidents and Pedestrian Accidents)

On Portland Avenue, another pattern of bicycle accidents emerges west of Masonic Avenue (there are four bicycle accidents in this street segment), however, there are no pedestrian accidents in this segment of Portland Avenue. Similarly, on Santa Fe Avenue south of Marin Avenue there are two bicycle accidents recorded on this street but no pedestrian accidents. On Brighton Avenue west of Masonic Avenue, there are two bicycle accidents recorded on this street segment, and two pedestrian accidents.

Table 4.2, Pedestrian Accident Summary, and *Table 4.3, Bicycle Accident Summary*, shows details regarding each accident recorded during the period for which SWITRS data was available—January 1994 through September 1997. Accident injuries are reported according to the police officer's ability to assess injury on the scene. As shown in these tables, many of these bicycle and pedestrian accidents are classified as ones where victims had visible injuries. All of the reported accidents involved a vehicle; there were no bicycle vs. bicycle accidents reported.

There is no marked pattern of either time of day, or day of the week, which can be seen for either pedestrian or bicycle accidents. These patterns appear to be random. In terms of party at fault, however, a clear pattern emerges. For the majority of bicycle accidents reported, the bicyclist was cited as being at fault. For pedestrian accidents, the opposite was true—most accident reports showed that the driver of the vehicle was at fault.

4.2.4 Issue: Child Pedestrian Safety

Child pedestrian safety was cited as being a critical issue by parents and others in the public process. Citizens were particularly concerned about the safety of children traveling to and from school on foot, by bicycle, and while being dropped off near the schools.

Observations and data gathered at each school where residents indicated that child safety was an issue were very similar. At the drop-off areas and critical school route crossings at the former Albany Middle School (now Ocean View Elementary School) and the Marin School, there were no pedestrian or bicycle accidents recorded. However, risky behavior was observed during the pick-up and drop-off times at these schools. At the Marin School, for example, some parents were observed blocking streets and dropping off children in travel lanes, requiring them to cross mid-block against traffic traveling at relatively high rates of speed. This type of risky behavior has not resulted in accidents at these locations, but one near-accident was observed by the consultant team. In addition, although there are relatively high traffic speeds and volumes near the Marin School (on Marin Avenue and Santa Fe Avenue) and the former Albany Middle School (mainly on Buchanan Street and Marin Avenue), the lack of accidents related to pedestrian and bicycle travel by school children at these locations appears to indicate that safety programs such as school crossing guards are likely to have contributed a positive effect on child safety. However, observations indicate that the behavior of parents loading school children needs to be addressed. Residents expressed additional concern for child pedestrian safety at the former location of the

Albany Middle School, because of its planned conversion to an elementary school in fall 1999. At Albany High School, one pedestrian accident was recorded on Portland Avenue adjacent to the school. Risky behavior of parents dropping off children was also seen at this school, similar to those seen at other schools. In addition, although risky behavior of student drivers was not observed at the High School during the data collection efforts, anecdotal reports of young drivers exhibiting risky driving behavior were provided by residents.

Table 4.1 City of Albany Accident Summary for 1994-1997

Location		Number of Accidents						Accidents Per Million Vehicles	
North/South	East/West	Total	Fatal	Injury	PDO	Ped	Bike	Reported	Expected
Adams	Solano	3	0	3	0	1	1	0.35	0.33
Buchanan	Buchanan Exchange	1	0	1	0			0.03	0.19
Carmel	Portland	1	0	1	0			0.18	0.33
Carmel	Solano	3	0	2	1		2	0.23	0.33
Carmel	Thousand Oak	3	0	3	0			0.77	0.33
Carmel	Washington	2	0	2	0	1		0.43	0.33
Total		**9**	**0**	**8**	**1**	**1**	**2**	**1.61**	**1.32**
Cleveland	Buchanan	8	0	8	0			0.21	0.14
Cleveland	Off Ramp	2	0	1	1			0.32	0.19
Cleveland	Solano	1	0	1	0			0.15	0.19
Total		**11**	**0**	**10**	**1**	**0**	**0**	**0.68**	**0.52**
Cornell	Brighton	2	0	2	0			0.26	0.33
Cornell	Marin	2	0	2	0	1		0.07	0.33
Cornell	Portland	2	0	2	0		1	0.26	0.33
Cornell	Solano	5	0	5	0	1		0.25	0.33
Total		11	0	11	0	2	1	0.83	1.32
Curtis	Marin	6	0	6	0		2	0.20	0.33
Curtis	Portland	1	0	1	0			0.16	0.33
Curtis	Solano	1	0	1	0			0.05	0.33
Curtis	Thousand Oaks	1	0	1	0			0.18	0.33
Total		**9**	**0**	**9**	**0**	**0**	**2**	**0.59**	**1.32**
Evelyn	Garfield	1	0	1	0			0.11	0.33
Evelyn	Marin	3	0	2	1	1	1	0.11	0.33
Evelyn	Portland	1	0	1	0			0.16	0.33
Evelyn	Solano	2	0	2	0			0.10	0.33
Total		**7**	**0**	**6**	**1**	**1**	**1**	**0.48**	**1.32**
Jackson	Buchanan	1	0	1	0			0.03	0.54
Jackson	Castro	1	0	1	0			0.74	0.55
Jackson	Solano	1	0	0	1		1	0.18	0.64
Total		**3**	**0**	**2**	**1**	**0**	**1**	**0.94**	**1.73**
Kains	Dartmouth	2	0	1	1			0.07	0.33
Kains	Marin	2	0	1	1			0.07	0.33
Kains	Portland	2	0	2	0		1	0.28	0.33
Kains	Solano	3	0	3	0	1	1	0.14	0.33
Kains	Brighton	2	0	1	1			0.26	0.33
Total		**11**	**0**	**8**	**3**	**1**	**2**	**0.83**	**1.65**
Key Route	Brighton	2	0	1	1			0.15	0.19
Key Route	Marin	4	0	3	1			0.14	0.33
Key Route	Solano	3	0	3	0	1		0.12	0.33
Key Route	Thousand Oak	3	0	2	1			0.41	0.55
Key Route	Washington	2	0	2	0	1	1	0.26	0.64
Total		**14**	**0**	**11**	**3**	**2**	**1**	**1.08**	**2.04**
Madison	Buchanan	2	0	1	1			0.06	0.19
Masonic	Brighton	2	0	2	0	1	1	0.23	0.33
Masonic	Marin	6	0	4	2		1	0.18	0.54
Masonic	Portland	1	0	1	0			0.13	0.64
Masonic	Solano	8	0	8	0	1	2	0.33	0.54
Masonic	Washington	4	0	4	0			0.45	0.64
Total		**21**	**0**	**19**	**2**	**2**	**4**	**1.32**	**2.69**
Monroe		1	0	1	0			0.51	0.55

Table 4.1 City of Albany Accident Summary for 1994-1997

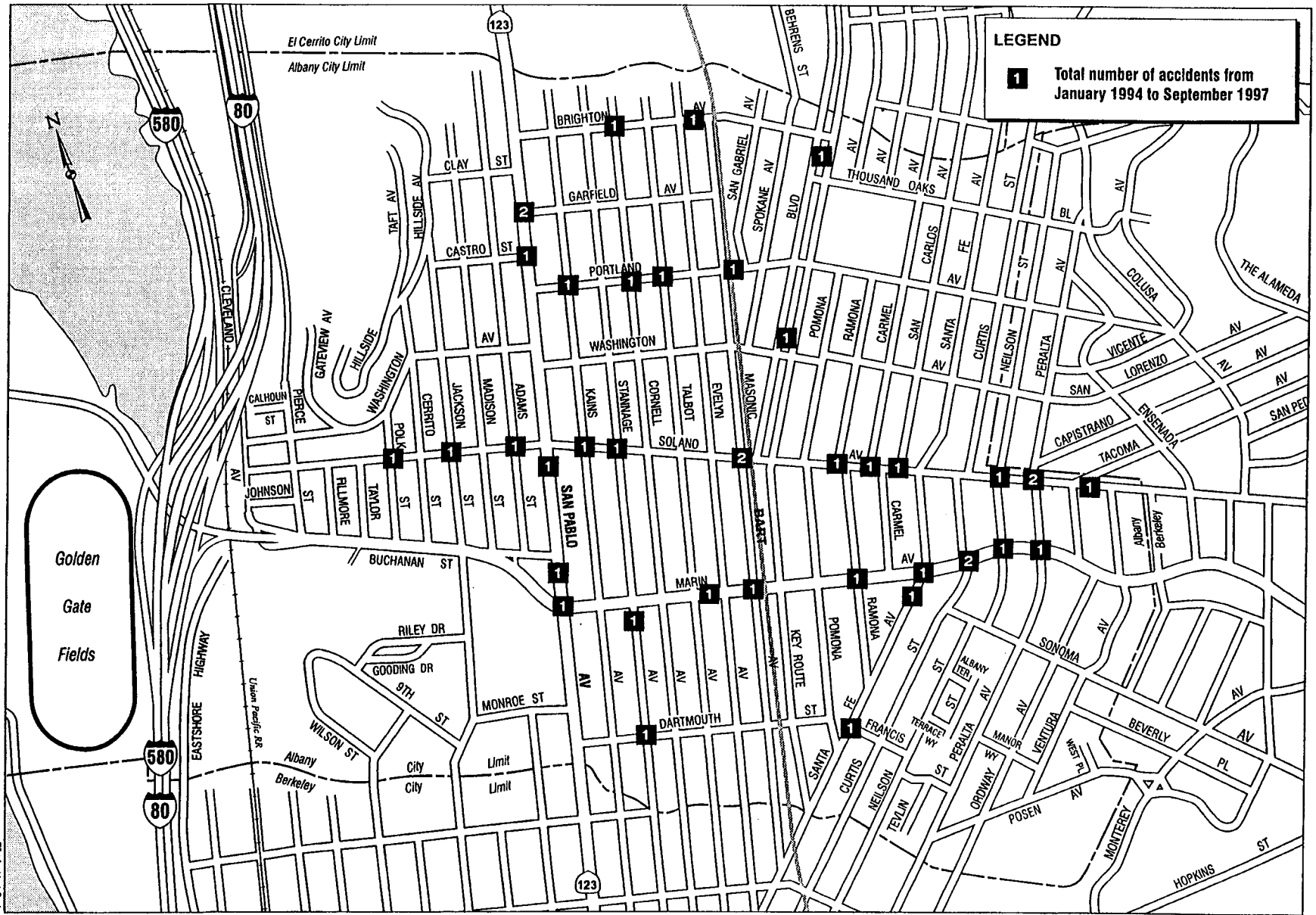
Location		Number of Accidents						Accidents Per Million Vehicles	
North/South	East/West	Total	Fatal	Injury	PDO	Ped	Bike	Reported	Expected
Neilson	Francis	1	0	0	1			0.73	0.64
Neilson	Marin	4	0	4	0		1	0.14	0.33
Neilson	Solano	1	0	1	0	1		0.05	0.33
Total		**6**	**0**	**5**	**1**	**1**	**1**	**0.92**	**1.30**
Off Ramp	Buchanan	5	0	1	4			0.39	0.14
On Ramp	Buchanan	7	0	4	3			0.55	0.14
Ordway	Marin	2	0	2	0			0.07	0.33
Ordway	Solano	1	0	0	1			0.05	0.19
Total		**10**	**0**	**6**	**4**	**0**	**0**	**0.12**	**0.52**
Peralta	Marin	3	0	2	1	1	1	0.10	0.54
Peralta	Solano	3	0	3	0		3	0.23	0.19
Total		**6**	**0**	**5**	**1**	**1**	**4**	**0.33**	**0.73**
Pierce	Buchanan	3	0	2	1			0.08	0.19
Pierce	Off Ramp	2	0	1	1			5.53	0.19
Pierce	On Ramp	1	0	0	1			0.80	0.19
Pierce	Solano	1	0	1	0			0.09	0.64
Pierce		1	0	1	0			0.09	NA
Total		**8**	**0**	**5**	**3**	**0**	**0**	**6.59**	**1.21**
Polk	Buchanan	2	0	2	0			0.41	0.19
Polk	Solano	1	0	1	0		1	0.20	0.33
Total		**3**	**0**	**3**	**0**	**0**	**1**	**0.61**	**0.52**
Portland		1	0	0	1	1		0.23	NA
Ramona	Marin	1	0	1	0			0.03	0.33
Ramona	Portland	1	0	1	0	1		0.23	0.19
Ramona	Solano	2	0	2	0			0.15	0.33
Total		**4**	**0**	**4**	**0**	**1**	**0**	**0.42**	**0.85**
San Carlos	Solano	2	0	2	0	1	1	0.15	0.19
San Gabriel	Portland	1	0	1	0		1	0.23	0.19
San Pablo	Brighton	15	0	6	9	1		0.33	0.39
San Pablo	Buchanan	38	0	0	38			0.95	0.39
San Pablo	Castro	8	0	2	6	1	1	0.20	0.19
San Pablo	Clay	9	0	3	6			0.22	0.39
San Pablo	Dartmouth	14	0	3	11			0.37	0.19
San Pablo	El Cerrito City Border	1	0	1	0			0.02	NA
San Pablo	Garfield	14	0	2	12	1	2	0.35	0.19
San Pablo	Marin	40	0	8	32		1	0.63	0.39
San Pablo	Monroe	9	0	2	7			0.24	0.39
San Pablo	Portland	13	0	3	10	1		0.30	0.19
San Pablo	Solano	51	0	10	41	2	2	0.92	0.39
San Pablo	Washington	35	0	13	22	3		0.81	0.39
San Pablo		13	0	3	10			0.36	NA
Total		**260**	**0**	**56**	**204**	**9**	**6**	**5.69**	**3.49**
Santa Fe	Francis	1	0	0	1		1	0.18	0.33
Santa Fe	Marin	4	0	4	0		2	0.12	0.54
Santa Fe	Ramona	2	0	2	0			0.33	0.19
Santa Fe	Solano	1	0	1	0			0.05	0.54
Santa Fe	Washington	1	0	1	0			0.16	0.64
Total		**9**	**0**	**8**	**1**	**0**	**3**	**0.83**	**2.24**
Stannage	Dartmouth	1	0	1	0		1	0.35	0.33
Stannage	Marin	1	0	1	0		1	0.04	0.33
Stannage	Solano	8	0	8	0	2	1	0.40	0.33
Stannage	Washington	2	0	2	0			0.43	0.33
Stannage		1	0	1	0	1		1.02	NA
Total		**13**	**0**	**13**	**0**	**3**	**3**	**2.24**	**1.32**

Table 4.1 City of Albany Accident Summary for 1994-1997

Location		Number of Accidents						Accidents Per Million Vehicles	
North/South	East/West	Total	Fatal	Injury	PDO	Ped	Bike	Reported	Expected
Talbot	Brighton	1	0	1	0	1		0.15	0.33
Talbot	Marin	1	0	1	0			0.04	0.33
Talbot	Portland	3	0	2	1		1	0.67	0.33
Talbot	Solano	4	0	4	0	2		0.20	0.33
Total		9	0	8	1	3	1	1.05	1.32
Taylor	Solano	1	0	1	0	1		0.21	0.19
Ventura	Solano	1	0	1	0		1	0.08	0.19
Solano Total		**107**	**0**	**63**	**44**	**14**	**16**	**4.70**	**7.85**
Marin Total		**79**	**0**	**41**	**38**	**3**	**10**	**1.93**	**5.31**

NOTE: Shaded Regions Indicate Reported Accident Rate Exceeding the Expected Rate

* Intersections with No Reported Accidents are not Recorded in this Table or its Calculations.



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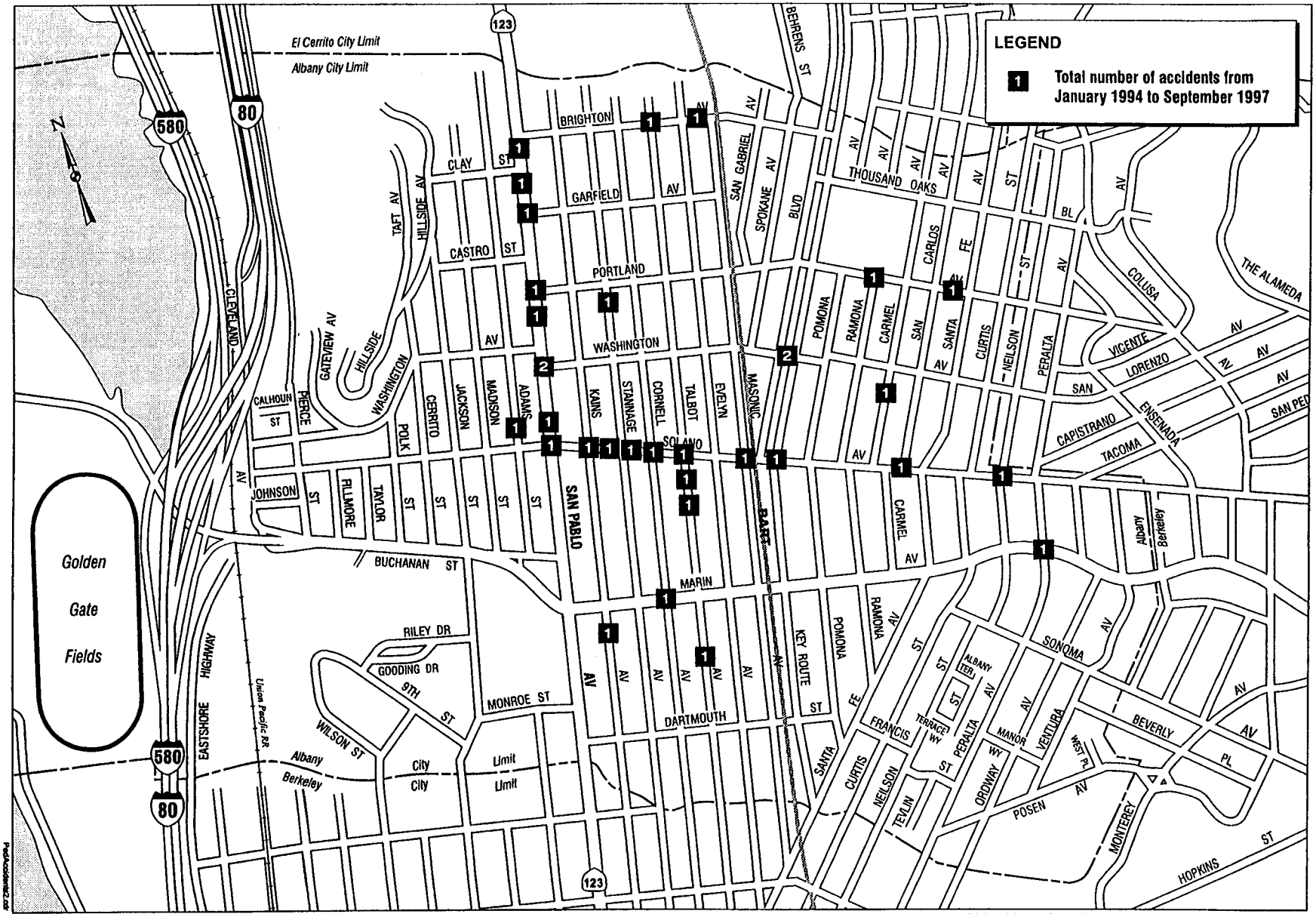
ALBANY CITYWIDE TRANSPORTATION PLAN

Figure 4.6

BICYCLE ACCIDENT FREQUENCY



ALBANY CITYWIDE TRANSPORTATION PLAN

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Figure 4.7

PEDESTRIAN ACCIDENT FREQUENCY

Table 4.2 Pedestrian Accident Summary

Location		Type of Accident	Day of Week	Date	Time of Day	Ped. Info	Primary Collision Factor	Pedestrian Action	Party at Fault
North/South	East/West								
Adams 15 ft. N of	Solano	Visible Injury	Mon	2/10/97	3:02PM	67F	-	in X-Walk	-
Carmel 75' S of	Washington	Complains of Pain	Fri	2/11/94	1:42PM	15M	Strtng/Bckng	Not in Road	Drvr-HNBD
Cornell	Marin	Visible Injury	Fri	4/21/95	3:31PM	83M	Improper Passing	in X-Walk	Drvr-HNBD
Cornell	Solano	Complains of Pain	Wed	12/13/95	7:15PM	64F	ROW Ped	in X-Walk	Drvr-IMPU
Evelyn 158' S of	Marin	Severe Injury	Tue	9/24/96	6:12PM	8M	Ped Violation	Crossing	Ped
Kains 255' N of	Dartmouth	Visible Injury	Sat	7/9/94	2:51PM	6M	Ped Violation	Crossing	Ped-HNBD
43' E of Kains on	Solano	Visible Injury	Sat	4/19/97	9:15PM	34F	Unsafe Speed	In Road	Drvr-IMPU
Key Route	Washington	Visible Injury	Sat	9/9/95	12:47PM	26M	ROW Auto	Crossing	Drvr-HNBD
23' W of Key Route on	Solano	Complains of Pain	Tue	10/15/96	4:54PM	14F	ROW Ped	Crossing	Drvr-HNBD
Masonic	Solano	Visible Injury	Wed	11/6/96	3:24PM	71F	ROW Ped	in X-Walk	Drvr-HNBD
22' W of Masonic on	Brighton	Visible Injury	Sun	2/5/95	10:20PM	64M	ROW Ped	Crossing	Driver
Nielson	Solano	Severe Injury	Fri	11/3/95	7:21PM	32M	Drvr-Alc/Drug	in X-Walk	Drvr-HBDI
Peralta	Marin	Visible Injury	Mon	7/8/96	12:11PM	92M	ROW Ped	in X-Walk	Drvr-HNBD
-	1330 Portland	Visible Injury	Sat	1/13/96	10:42PM	19M	-	In Road	-
Ramona	Portland	Visible Injury	Mon	9/15/97	7:35AM	15F	Ped Violation	Crossing	Ped-HNBD
San Carlos	Solano	Visible Injury	Sat	7/5/97	10:04PM	16F	ROW Ped	in X-Walk	Drvr-IMPU
San Pablo	Garfield	Visible Injury	Thu	2/1/96	2:33PM	13M	Improper Passing	in X-Walk	Drvr-HNBD
San Pablo	Portland	Complains of Pain	Fri	11/4/94	1:00PM	40M	ROW Ped	in X-Walk	Drvr-IMPU
San Pablo	Solano	Complains of Pain	Thu	5/22/97	3:00PM	12M	Ped Violation	in X-Walk	Ped-HNBD
San Pablo	Washington	Visible Injury	Mon	11/6/95	3:15PM	50M	ROW Ped	in X-Walk	Drvr-HNBD
San Pablo	Washington	Complains of Pain	Fri	11/1/96	8:01AM	38F	ROW Ped	in X-Walk	Drvr-HNBD
San Pablo 47' N of	Solano	Visible Injury	Mon	9/9/96	4:55PM	54M	Ped Violation	In Road	Ped-IMPU
San Pablo 48' S of	Brighton	Visible Injury	Sun	3/10/96	5:57PM	16M	Ped Violation	Crossing	Ped-HNBD
San Pablo 77' N of	Castro	Complains of Pain	Fri	1/12/96	5:00PM	25M	Other Hazard	In Road	-
San Pablo 100' N of	Washington	Complains of Pain	Tue	1/30/96	7:33PM	73F	Hazardous Parking	In Road	Other
Stannage	Solano	Complains of Pain	Wed	12/27/95	3:09PM	20F	ROW Ped	in X-Walk	Drvr-HNBD
848 Stannage	-	Severe Injury	Sat	6/11/94	11:07AM	24F	Wrong Side	In Road	Drvr-IMPU
25' W of Stannage on	Solano	Visible Injury	Wed	5/28/97	11:05AM	56M	Strtng/Bckng	Not in Road	Drvr-HNBD

Table 4.2 Pedestrian Accident Summary

Location		Type of Accident	Day of Week	Date	Time of Day	Ped. Info	Primary Collision Factor	Pedestrian Action	Party at Fault
North/South	East/West								
Talbot	Brighton	Visible Injury	Wed	6/14/95	1:36PM	51F	STOP Sign/Signal	Not in Road	Drvr-HNBD
Talbot	Solano	Complains of Pain	Thu	3/30/95	5:38PM	19M	ROW Ped	in X-Walk	Ped-HNBD
Talbot 147' S of	Solano	Complains of Pain	Wed	12/13/95	2:03PM	10F	Ped Violation	Crossing	Ped
Talbot 300' S of	Solano	Visible Injury	Fri	3/4/94	8:46AM	7M	Ped Violation	Crossing	Ped-HNBD

HNBD = Had Not Been Drinking **HBDI = Has Been Driving Under the Influence** **IMPU = Impairment Unknown**

Table 4.3 Bicycle Accident Summary

Location		Type of Accident	Day of Week	Date	Time of Day	Cyclist Info	Primary Collision Factor	Party at Fault
North/South	East/West							
Adams	Solano	Visible Injury	Mon	1/20/97	11:15AM	14M	Wrong Side	Bicy-HNBD
Carmel	Solano	Visible Injury	Mon	4/14/97	8:38PM	38M	-	-
Cornell	Portland	Complains of Pain	Wed	2/22/95	2:15PM	78M	ROW Auto	Bicy-IMPU
5' E of Cornell on	Brighton	Visible Injury	Tue	11/4/97	5:28PM	41M	STOP Sign/Signal	Bicy-HNBD
50' W of Carmel on	Solano	Complains of Pain	Thu	7/20/95	6:20PM	29M	Other Equipment	Bicy-HNBD
Curtis	Marin	Complains of Pain	Wed	4/20/94	5:13PM	12F	ROW Ped	Drvr-HNBD
Curtis	Marin	Visible Injury	Tue	12/6/94	3:12PM	13F	ROW Ped	Drvr-HNBD
23' W of Evelyn on	Marin	Complains of Pain	Tue	5/20/97	9:30AM	41F	Other Hazard	Drvr-HNBD
Jackson	Solano	Severe Injury	Fri	6/3/94	8:52AM	42M	STOP Sign/Signal	Bicy-HNBD
Kains	Portland	Visible Injury	Fri	3/8/96	5:34PM	47M	Other Hazard	Bicy
35' E of Kains on	Solano	Visible Injury	Fri	3/15/96	3:29PM	24M	Improper Turn	Drvr-HNBD
Key Route 21' N of	Thousand Oaks	Visible Injury	Tue	10/15/96	6:02PM	43M	-	-
Key Route 21' N of	Washington	Complains of Pain	Sat	9/20/97	8:38PM	14M	STOP Sign/Signal	Bicy-HNBD
Masonic	Marin	Complains of Pain	Sat	8/12/95	12:00PM	13F	ROW Auto	Drvr-HNBD
Masonic	Solano	Visible Injury	Wed	12/6/95	9:31AM	15F	-	-
Masonic	Solano	Complains of Pain	Tue	12/12/95	10:43AM	18M	ROW Auto	Bicy-HNBD
110' E of Masonic on	Brighton	Complains of Pain	Wed	1/29/97	1:45PM	61F	ROW Auto	Bicy-HNBD
Neilson	Marin	Visible Injury	Mon	9/16/96	8:12AM	21F	STOP Sign/Signal	Bicy-HNBD
Peralta	Marin	Visible Injury	Fri	10/28/94	2:55PM	45M	ROW Auto	Drvr-HNBD
74' E of Peralta on	Solano	Visible Injury	Fri	8/11/95	6:23PM	23M	-	Drvr-HNBD
96' E of Peralta on	Solano	Complains of Pain	Tue	3/11/97	2:03PM	34F	Improper Turn	Drvr-HNBD
138' E of Peralta on	Solano	Visible Injury	Wed	8/27/97	12:35PM	17M	Improper Passing	Bicy-HNBD
Polk	Solano	Complains of Pain	Thu	6/27/96	6:55PM	37M	ROW Auto	Drvr-HNBD
San Carlos	Solano	Visible Injury	Tue	1/14/97	8:49PM	M	Unsafe Speed	Bicy-IMPU
55' W of San Gabriel on	Portland	Visible Injury	Tue	6/18/96	1:20PM	15M	ROW Auto	Bicy-HNBD
San Pablo	Castro	Visible Injury	Sun	1/28/96	11:18AM	38M	Other Hazard	Driver
San Pablo	Garfield	Visible Injury	Wed	4/12/95	4:14PM	10M	Strtng/Bckng	Drvr-HNBD
San Pablo	Garfield	Non-Injury	Thu	9/28/95	10:06AM	-	Other Hazard	Bicy-HNBD
San Pablo	Marin	Visible Injury	Fri	11/3/95	1:30PM	72M	STOP Sign/Signal	Bicy-HNBD
San Pablo 20' S of	Solano	Complains of Pain	Wed	10/11/95	1:43PM	13M	ROW Ped	Drvr-HNBD
San Pablo 453' S of	Solano	Complains of Pain	Fri	11/3/95	5:40PM	34M	-	-

Table 4.3 Bicycle Accident Summary

Location		Type of Accident	Day of Week	Date	Time of Day	Cyclist Info	Primary Collision Factor	Party at Fault
North/South	East/West							
Santa Fe	Marin	Visible Injury	Mon	6/24/96	5:28PM	8M	Ped Violation	Bicy-HNBD
Santa Fe	**Francis**	**Visible Injury**	**Tue**	**5/24/94**	**8:20AM**	**10M**	**ROW Auto**	**Bicy-HNBD**
Santa Fe 10' S of	**Mar!n**	**Complains of Pain**	**Mon**	**4/22/96**	**8:02AM**	**14M**	**ROW Auto**	**Drvr-HNBD**
Stannage	**Dartmouth**	**Visible Injury**	**Mon**	**5/27/96**	**2:32PM**	**7M**	**ROW Auto**	**Bicy-HNBD**
Stannage	**Solano**	**Visible Injury**	**Sun**	**9/28/97**	**7:15PM**	**14M**	**-**	**Bicy-HNBD**
Stannage 16' S of	**Marin**	**Complains of Pain**	**Thu**	**7/11/96**	**3:22PM**	**11F**	**ROW Auto**	**Bicy-HNBD**
Talbot	**Portland**	**Complains of Pain**	**Wed**	**12/14/94**	**7:40AM**	**40M**	**STOP Sign/Signal**	**Bicy-HNBD**
70' W of Ventura on	**Solano**	**Complains of Pain**	**Tue**	**4/19/94**	**12:42PM**	**34M**	**Not Driver**	**-**

HNBD = Had Not Been Drinking HBDI = Had Been Drinking under the Influence IMPU = Impairment Unknown

4.2.5 Issue: Sight Distance/Geometric Configuration

The American Association of State Highway and Transportation Official (AASHTO) Traffic Handbook Table VII-3 recommends a sight distance of 150 feet for a local roadway with a 30 mph design speed. Simply put, the traffic engineering industry standard recommends that persons traveling on a roadway which was designed for a comfortable traveling speed of 30 mph will need a clear line of sight of at least 150 feet in any direction once they have stopped at the STOP bar. With this minimum "sight distance" of 150 feet, drivers can see vehicles which may be approaching the intersection and judge when it is safe to proceed. If this clear line of sight of 150 feet is not available, vehicles must partially enter the intersection to adequately see approaching vehicles, and in some cases may not be able to see approaching vehicles until they are very close to the intersection. The following street intersections have at least one approach to the intersection, which does not meet the AASHTO standard:

- Adams Street and Washington Avenue
- Washington Avenue and Cerrito Street
- Cerrito Street and Hillside Avenue
- Pierce Street (500 block) at Bridgewater Complex driveway
- Pomona Avenue and Thousand Oaks Boulevard
- Pomona Avenue and Washington Avenue
- Ramona Avenue and Thousand Oaks Boulevard
- Marin Avenue and Santa Fe Avenue
- Peralta Avenue and Francis Street
- Solano Avenue and Ventura Avenue
- Solano Avenue between Taylor Street and Cerrito Street

There are six locations in the City where citizens identified problems associated with the geometric design of the intersections. The locations and issues include:

- Buchanan Street and Marin Avenue: the westbound merging maneuver is difficult for drivers on Buchanan due to the shallow angle between the two streets
- Pomona Avenue and Washington Avenue: there is a jog in Washington Avenue at this intersection, and while Pomona traffic is controlled by a STOP sign, Washington Avenue traffic is not controlled
- Santa Fe Avenue at Pomona Avenue: the angular approach results in poor visibility for drivers on Pomona Avenue
- Santa Fe Avenue at Ramona Avenue: the angular approach results in poor visibility for drivers on Ramona Avenue
- Santa Fe Avenue at Key Route Boulevard: the angular approach results in poor visibility for drivers on Key Route Boulevard
- Marin Avenue at Ventura Avenue: poor sight distance

4.2.6 Issue: Residential Neighborhood Parking

Residents living near the Marin School, Albany High School, and the Solano Avenue business district were concerned about the intrusion of non-resident parking in their neighborhoods. Near the Marin School, residents were concerned about teacher parking on residential streets. Near Albany High School, residents were concerned about both student and teacher parking on residential streets. On the streets adjacent to Solano Avenue, residents were concerned about evening commercial parking on residential streets, mainly restaurant and bar patrons.

Major findings at the Marin School show that the parking occupancy on Santa Fe Avenue on the 1000 block adjacent to the Marin School during the mid-morning weekday was 78 percent. This is less than 85 percent occupancy, which is considered by professional traffic engineering standards to be full street parking occupancy (the standard is conservative since it does not require 100% occupancy; drivers will perceive the street to be full at 85% occupancy, allowing for parking and unparking of vehicles).

Major findings for the Albany High School area streets validates resident concerns that on some streets there is heavy parking occupancy resulting from high school activity, and shows that parking occupancies adjacent to the high school are unbalanced; some areas have significant parking capacity available and some streets are heavily parked.

Parking occupancies are significantly high on Solano Avenue during the weekday evening survey period (up to 97 percent occupancy east of Ramona Avenue). However, residential parking occupancy exceeded 80 percent on only one street: Ordway Avenue from Solano Avenue to Marin Avenue (85 percent occupancy).

The City of Albany has adopted procedures for establishing permit parking districts if residents are interested in permit parking, and parking occupancies by non-residents, warrant a permit parking district at these locations. Of the locations studied, Solano Avenue area streets may, on further investigation for weekend evenings, show high enough parking occupancies to warrant permit parking should residents be inclined to follow City procedures to petition. However, on each of the streets where residents offered complaints about non-resident parking, virtually none showed full parking occupancies (85 percent and over).

4.2.7 Issue: Traffic Level of Service

The City of Albany General Plan Circulation Element identifies "Level of Service" (LOS) as the primary indicator for traffic operation performance. The Element indicates that at the General Plan level of detail, it is appropriate to use average daily traffic (ADT) volume data to estimate LOS on the street network. In this study, the consultant team has gone to the next level of detail by analyzing service level at 10 signalized and 21 unsignalized intersections in the City. This analysis provides for a fundamental understanding as to how well the City's street system is functioning in the peak hours; it also provides a basis for evaluation of the plan recommendations.

Existing Traffic Volume and Level of Service

Figure 4.8 illustrates the location of intersections analyzed for LOS while *Figures 4.9-4.12* document the traffic count data. *Table 4.4* documents sources for the traffic counts used in this analysis. *Table 4.5* documents the LOS for the AM peak hour while *Table 4.6* documents conditions in the PM peak hour. Signalized intersections were evaluated using the "SYNCHRO" program. Unsignalized intersections were analyzed using procedures of the Highway Capacity Manual; the analysis tool for unsignalized intersections was the "TRAFFIX" program. "SYNCHRO" and "TRAFFIX" are traffic operations analysis software packages that provide analysis of intersection Level of Service and other traffic operations analysis.

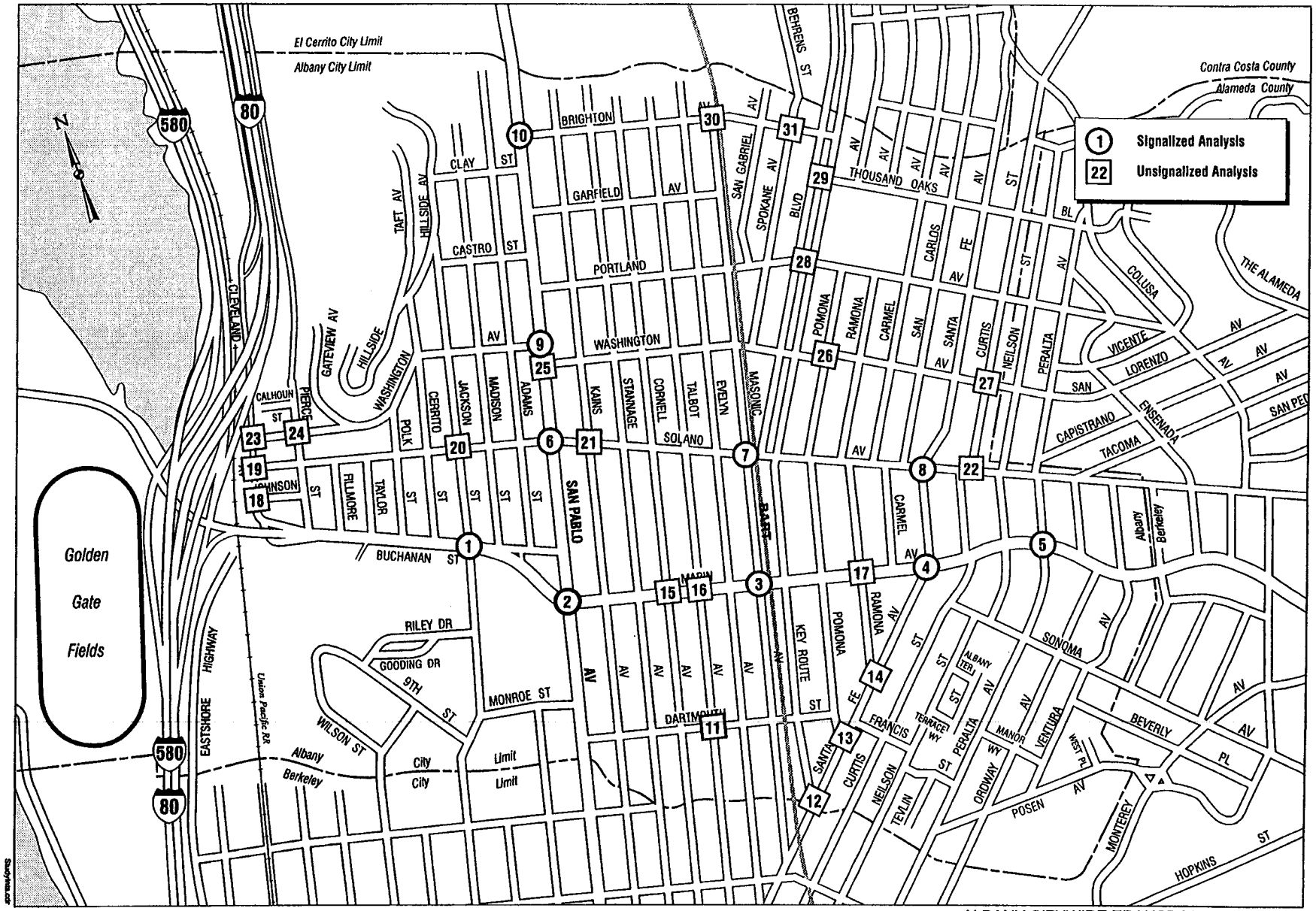

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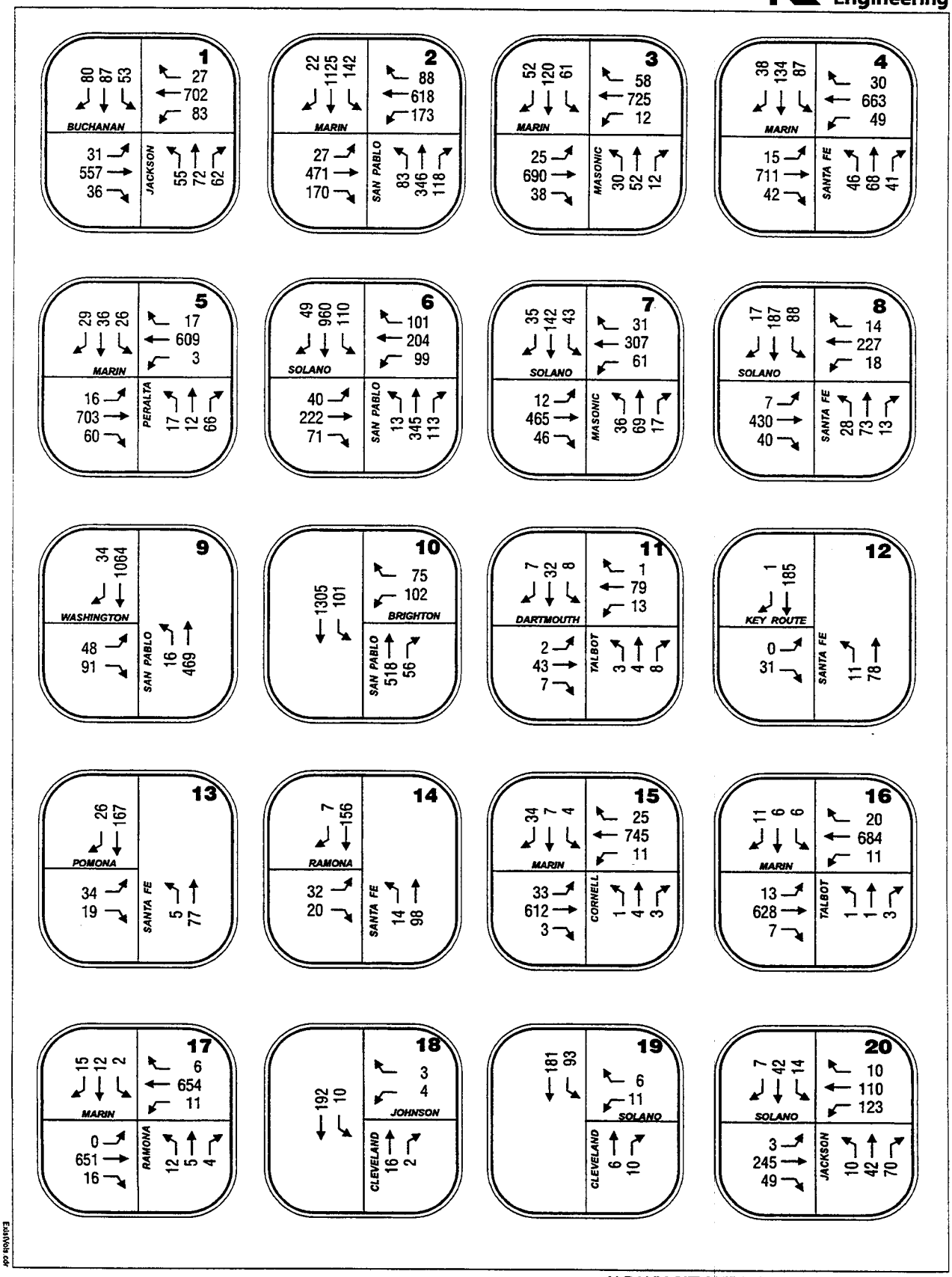
Figure 4.8

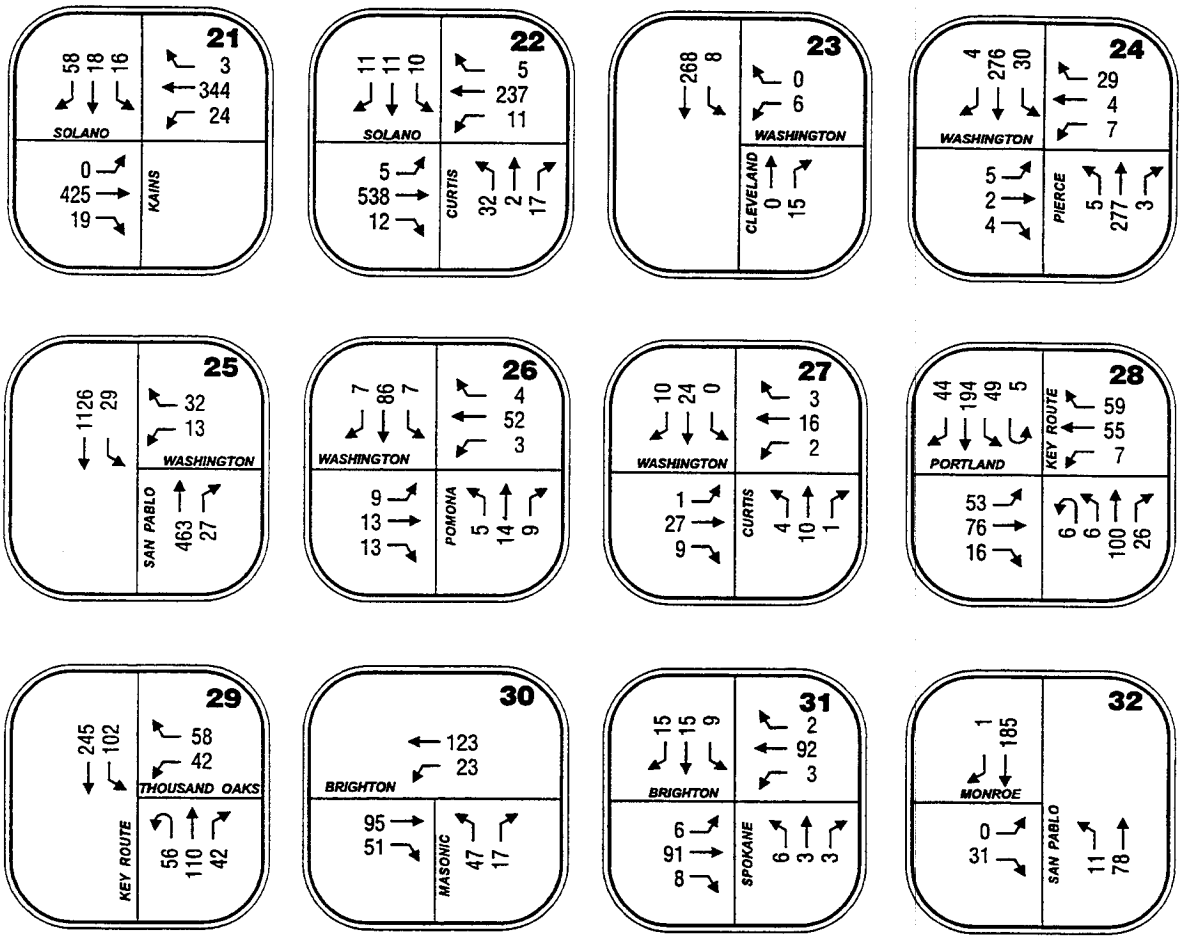
STUDY INTERSECTIONS



ALBANY CITYWIDE TRANSPORTATION PLAN

Figure 4.9

EXISTING TRAFFIC VOLUMES
AM Peak Hour

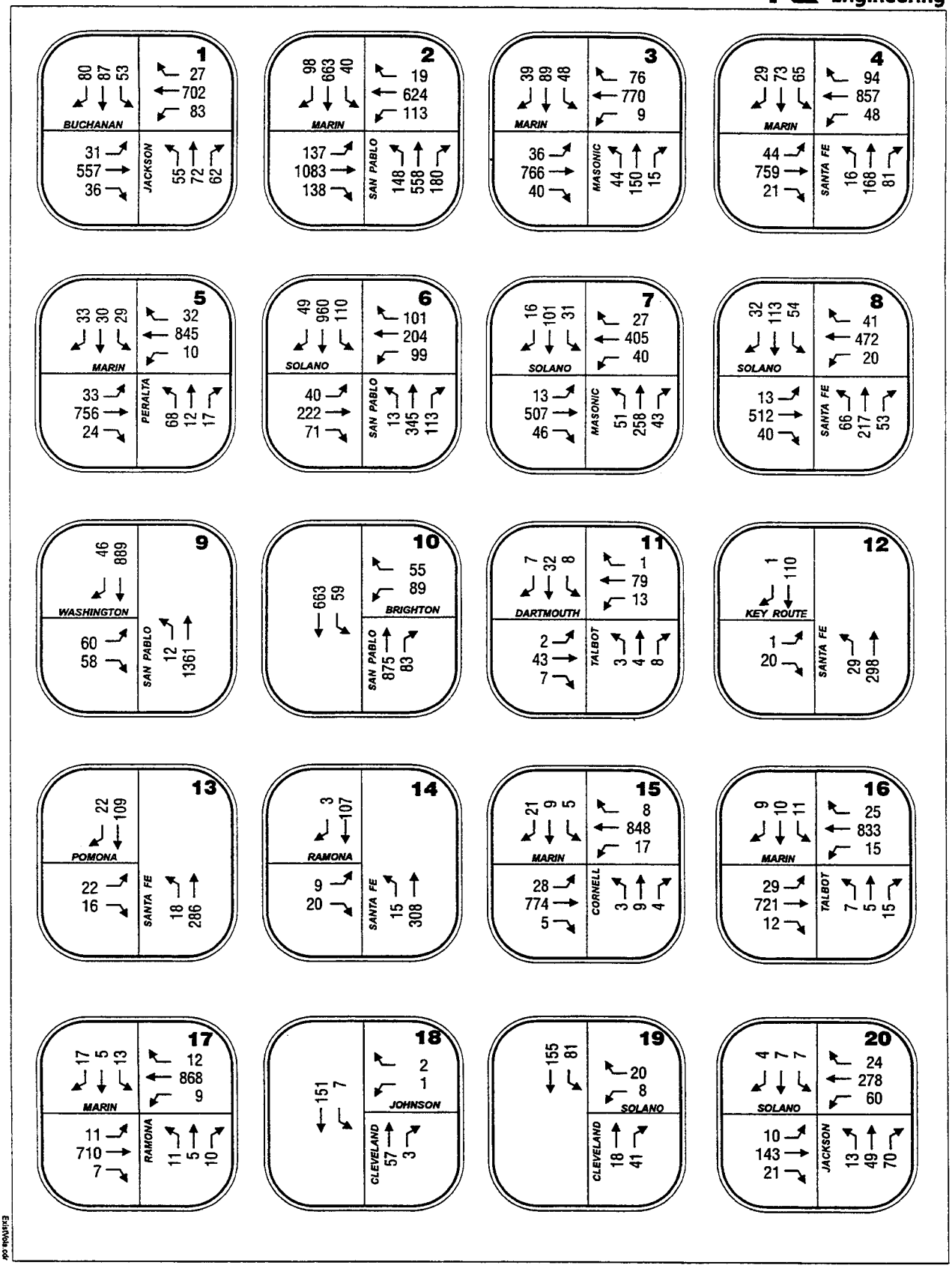


ALBANY CITYWIDE TRANSPORTATION PLAN

Figure 4.10

EXISTING TRAFFIC VOLUMES

AM Peak Hour

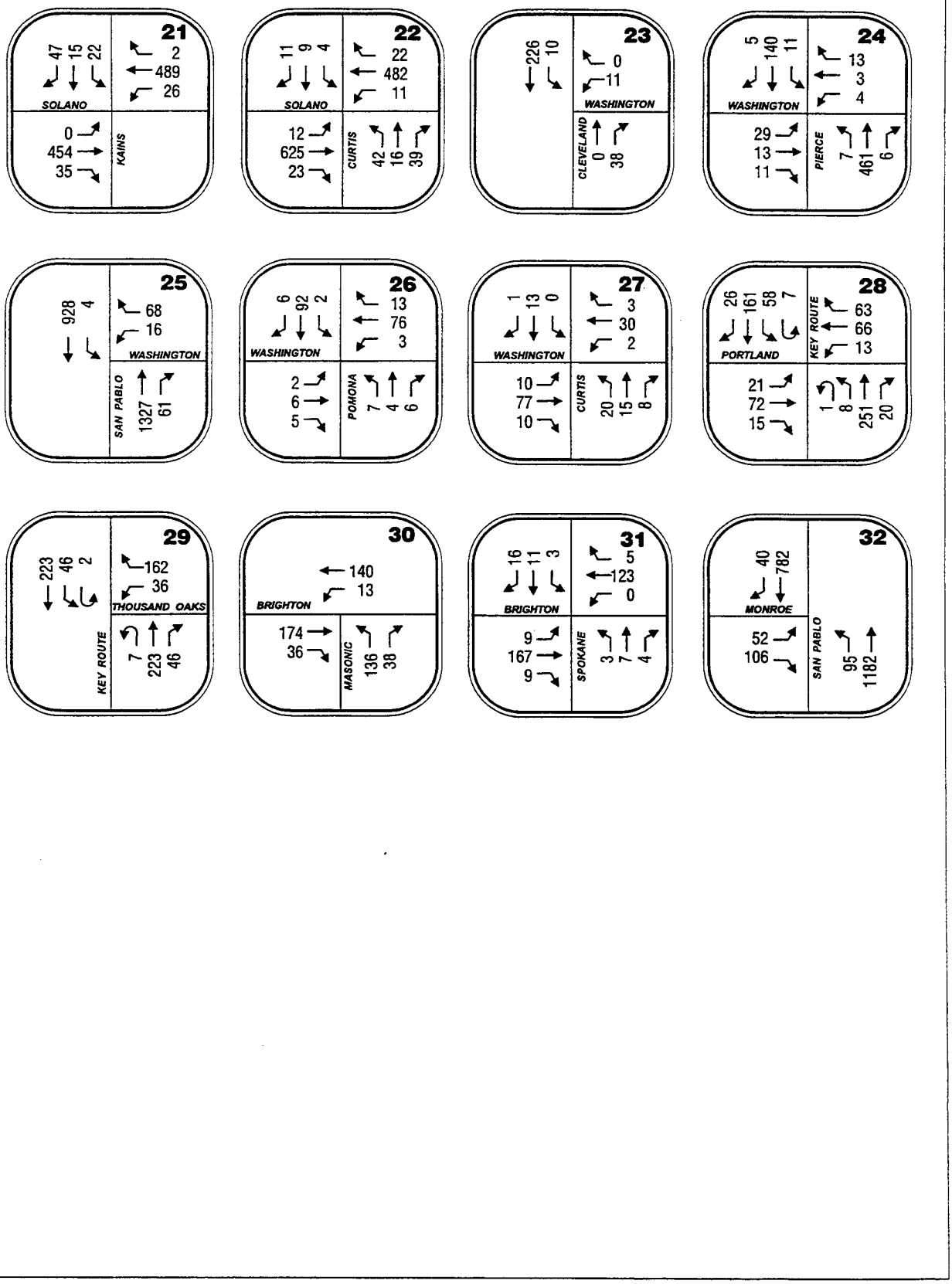


ALBANY CITYWIDE TRANSPORTATION PLAN

Figure 4.11

EXISTING TRAFFIC VOLUMES

PM Peak Hour



ALBANY CITYWIDE TRANSPORTATION PLAN

Figure 4.12

EXISTING TRAFFIC VOLUMES
PM Peak Hour

Year 2010 Traffic Volumes and Level of Service

An estimate of conditions in the year 2010 has been prepared to assist in an evaluation of the long-term impacts of the modifications to the City of Albany traffic network as proposed in this document. The projection was derived from area-wide forecasts prepared by the Alameda County Congestion Management Agency. The ACCMA forecasts include major projects such as the widening of I-80 (underway while the original data collection was made), and the upgrade of the I-80/I-580/Buchanan Street interchange (also under construction when the original data was collected). The ACCMA forecasts do not include the proposed connection of Eastshore Highway to Buchanan Street or the revisions to Cleveland Avenue that are contained in this plan.

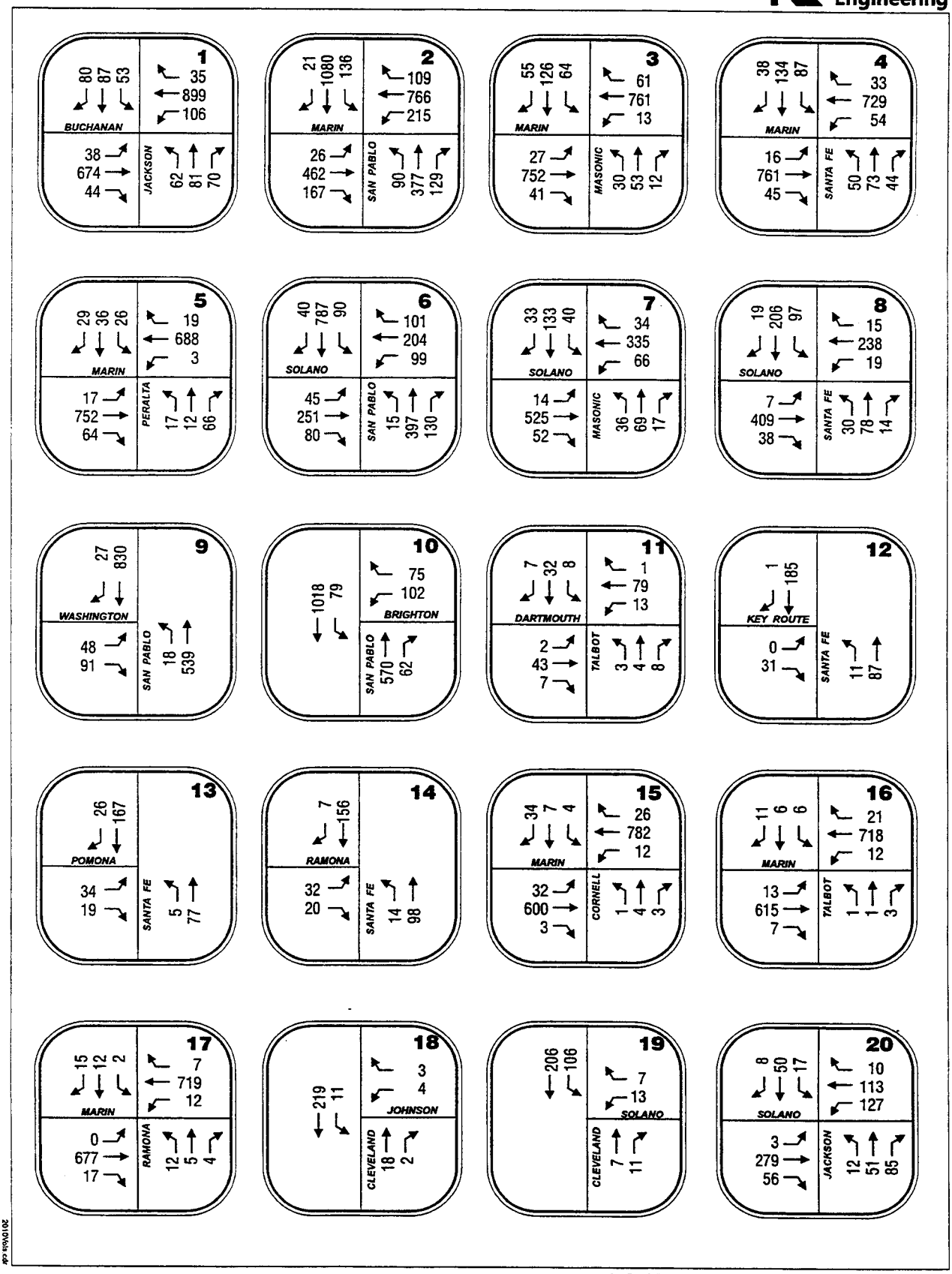
Estimates of future traffic volumes at the key 31 intersections were made by developing growth factors from the ACCMA 1990 and 2010 forecasts. The growth factors were adjusted to reflect the fact that the existing data for this study was collected in 1997/98. The growth factors were applied to each of the study area intersections. One exception for consistency: turning movements at Cleveland Avenue intersections were taken directly from the "Transportation and Circulation Analysis Eastshore Highway/Cleveland Avenue Redevelopment Project Area" by Fehr and Peers Associates, Inc., March, 1998.

Figures 4.13-4.16 document the projected turning movements at the key intersections for the AM and PM peak hours in 2010. *Tables 4.11 and 4.12* document the projected Service Level estimates. The tables indicate very little change in service level between 1998 and 2010. This is due in part to the projected diversion of traffic from San Pablo Avenue to I-80 due to the ongoing widening of I-80. The only significant change is that the intersection of San Pablo Avenue/Marin Avenue is projected to degrade from LOS D in 1998 to LOS E in 2010 in the PM peak hour. The same intersection is projected to remain at LOS D in the AM peak hour. All other intersections are projected to operate at LOS C or better in the year 2010.

Year 2010 with Traffic Management Plan

The 2010 projections were then analyzed with the measures proposed in the Traffic Management Plan. The proposed measures, that could change the baseline Service Level estimates, are those which alter the existing capacity of roads or intersections. A review of the proposed measures shows that no changes to existing capacity would result except on Marin Avenue. However, this analysis shows that the key issue is the capacity of intersections not the street itself.

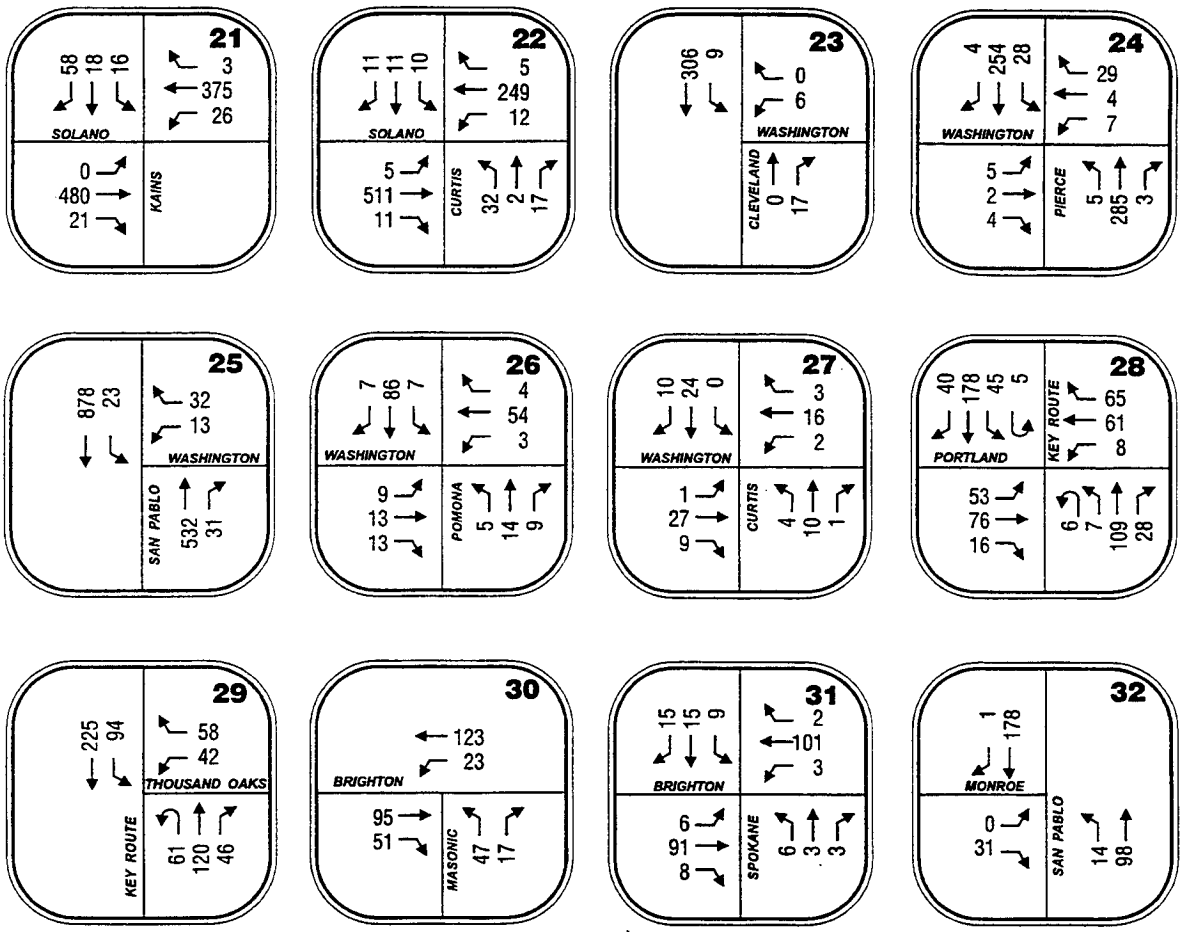
Alternative road or intersection configurations for Marin Avenue are shown in *Figures 6.3-6.10. (For further clarification on City Council direction, see City Council Resolution #00-32.)* The primary effect of these measures is to add left turn lanes and Class II bike lanes in each direction on Marin Avenue. The bike lanes are intended to improve bicycle safety and mobility on Marin Avenue. The left turn lanes eliminate the blockage of through lanes when vehicles wait to turn left from Marin Avenue. This avoids the formation of occasional bottlenecks and reduces the probability of rear end accidents and the risky behaviors that occur when drivers of through vehicles pull around vehicles that are stopped or slowing to make left turns.



ALBANY CITYWIDE TRANSPORTATION PLAN

Figure 4.13

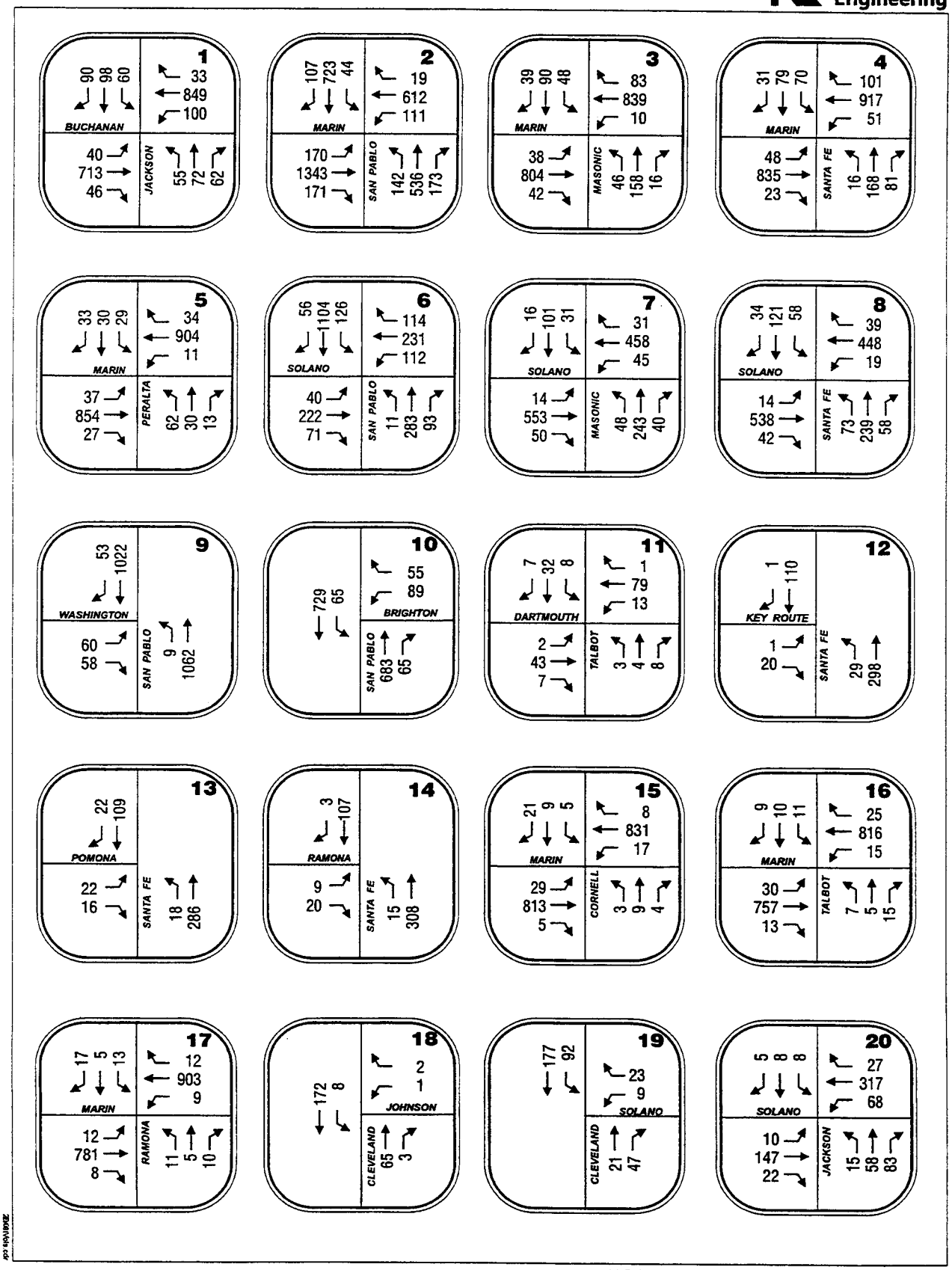
YEAR 2010 TRAFFIC VOLUMES
AM Peak Hour



ALBANY CITYWIDE TRANSPORTATION PLAN

Figure 4.14

YEAR 2010 TRAFFIC VOLUMES
AM Peak Hour

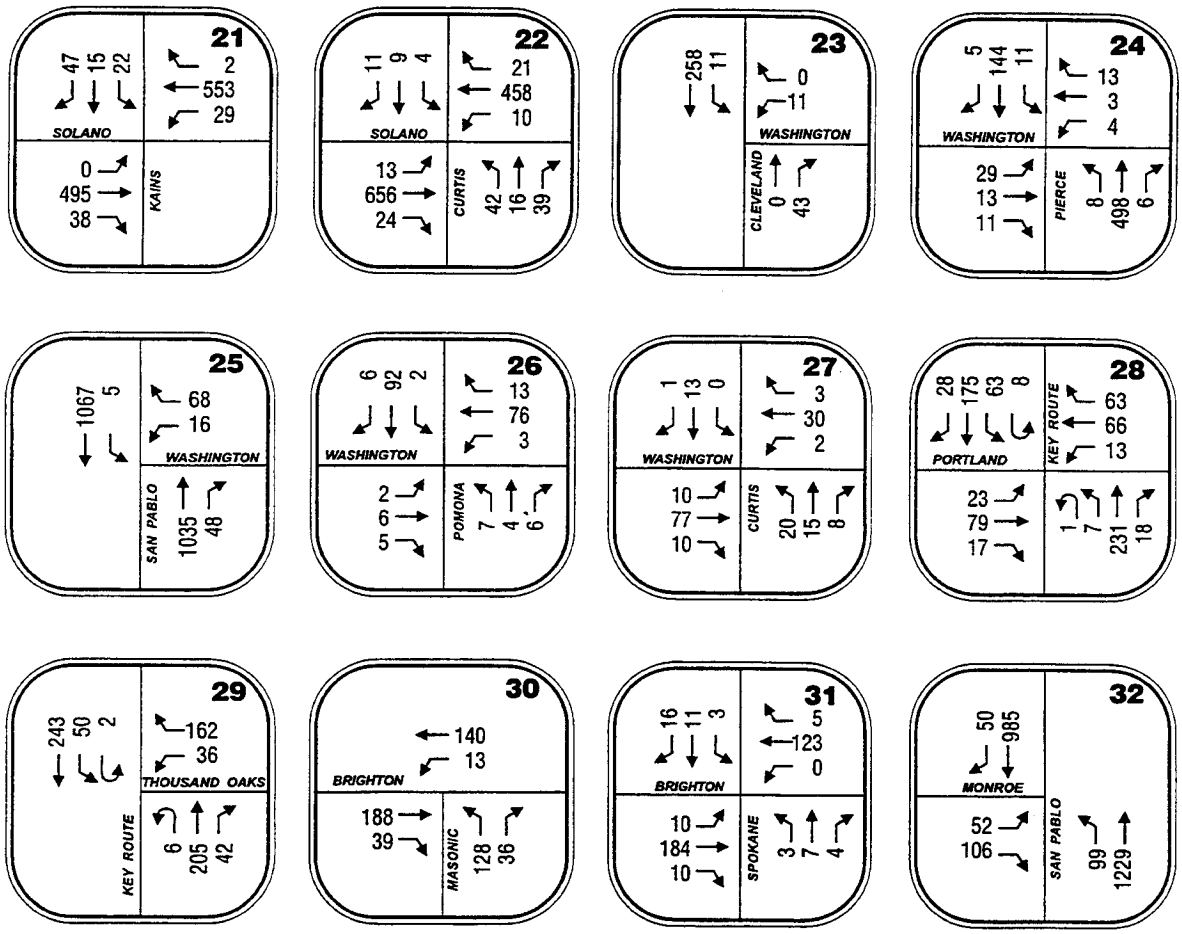


ALBANY CITYWIDE TRANSPORTATION PLAN

Figure 4.15

YEAR 2010 TRAFFIC VOLUMES

PM Peak Hour



ALBANY CITYWIDE TRANSPORTATION PLAN

Figure 4.16

YEAR 2010 TRAFFIC VOLUMES
PM Peak Hour

Table 4.4 Traffic Volume Sources

No.	Signalized Intersection	Count Date	Source
1	Buchanan/Jackson	4/16/98	Traffic Counts
2	San Pablo/Marin	9/17/97	Marin Avenue Bike Lane Project Traffic Study
3	Marin/Masonic	9/17/97	Marin Avenue Bike Lane Project Traffic Study
4	Santa Fe/Marin	9/17/97	Marin Avenue Bike Lane Project Traffic Study
5	Marin/Peralta	9/17/97	Marin Avenue Bike Lane Project Traffic Study
6	San Pablo/Solano	4/16/98	Traffic Counts
7	Masonic/Solano	4/15/98	Traffic Counts
8	Solano/Santa Fe	4/21/98	Traffic Counts
9	Washington/San Pablo	4/16/98	Traffic Counts
10	Brighton/San Pablo		
	Unsignalized Intersection		
11	Dartmouth/Talbot	4/14,16/98	Traffic Counts
12	Santa Fe/Key Route	4/14,16/98	Traffic Counts
13	Santa Fe/Pomona	4/14,16/98	Traffic Counts
14	Santa Fe/Ramona	4/14,16/98	Traffic Counts
15	Marin/Cornell	4/14,16/98	Traffic Counts
16	Marin/Talbot	4/14,16/98	Traffic Counts
17	Marin/Ramona	4/14,16/98	Traffic Counts
18	Cleveland/Johnson	4/16/98	Traffic Counts
19	Cleveland/Solano	4/16/98	Traffic Counts
20	Jackson/Solano	4/16/98	Traffic Counts
21	Kains/Solano	4/16/98	Traffic Counts
22	Solano/Curtis	4/15/98	Traffic Counts
23	Washington/Cleveland	4/16/98	Traffic Counts
24	Washington/Pierce	4/16/98	Traffic Counts
25	San Pablo/Washington	4/16/98	Traffic Counts
26	Washington/Pomona	4/15/98	Traffic Counts
27	Washington/Curtis	4/15/98	Traffic Counts
31	Portland/Key Route	4/15/98	Traffic Counts
29	Thousand Oaks/Key Route	4/15/98	Traffic Counts
30	Masonic/Brighton	4/15/98	Traffic Counts
31	Brighton/Spokane	4/15/98	Traffic Counts

Table 4.5 Intersection Level of Service Summary Table - 1998 AM Peak Hour

No.	Signalized Intersection	Existing	
		LOS[1]	Delay[2]
1	Buchanan/Jackson	B	10.3
2	San Pablo/Marin	D	27.7
3	Marin/Masonic	B	7.0
4	Santa Fe/Marin	B	7.4
5	Marin/Peralta	B	5.3
6	San Pablo/Solano	B	11.5
7	Masonic/Solano	B	9.0
8	Solano/Santa Fe	B	8.9
9	Washington/San Pablo	A	5.2
10	Brighton/San Pablo	B	6.0
	Unsignalized Intersection		
11	Dartmouth/Talbot	A	1.5
12	Santa Fe/Key Route	A	0.5
13	Santa Fe/Pomona	A	0.8
14	Santa Fe/Ramona	A	0.9
15	Marin/Cornell	A	0.8
16	Marin/Talbot	A	0.5
17	Marin/Ramona	A	0.9
18	Cleveland/Johnson	A	0.2
19	Cleveland/Solano	A	1.0
20	Jackson/Solano	B	7.5
21	Kains/Solano	B	0.8
22	Solano/Curtis	A	1.0
23	Washington/Cleveland	A	0.2
24	Washington/Pierce	A	0.7
25	San Pablo/Washington	A	0.6
26	Washington/Pomona	A	2.6
27	Washington/Curtis	A	1.8
28	Portland/Key Route	C	10.5
29	Thousand Oaks/Key Route	B	7.8
30	Masonic/Brighton	A	1.2
31	Brighton/Spokane	A	1.0

[1] Level of Service for signalized intersections
[2] Average stopped delay per vehicle for all intersection approaches

Table 4.6 Intersection Level of Service Summary Table - 1998 PM Peak Hour

No.	Signalized Intersection	Existing	
		LOS[1]	Delay[2]
1	Buchanan/Jackson	B	10.2
2	San Pablo/Marin	D	28.4
3	Marin/Masonic	A	5.0
4	Santa Fe/Marin	B	10.1
5	Marin/Peralta	B	5.6
6	San Pablo/Solano	B	11.4
7	Masonic/Solano	B	11.0
8	Solano/Santa Fe	B	9.3
9	Washington/San Pablo	A	4.0
10	Brighton/San Pablo	B	6.0
	Unsignalized Intersection		
11	Dartmouth/Talbot	A	1.5
12	Santa Fe/Key Route	A	0.3
13	Santa Fe/Pomona	A	0.5
14	Santa Fe/Ramona	A	0.4
15	Marin/Cornell	A	1.3
16	Marin/Talbot	A	1.4
17	Marin/Ramona	A	1.4
18	Cleveland/Johnson	A	0.1
19	Cleveland/Solano	A	1.0
20	Jackson/Solano	B	6.2
21	Kains/Solano	A	0.9
22	Solano/Curtis	A	1.9
23	Washington/Cleveland	A	0.3
24	Washington/Pierce	A	0.9
25	San Pablo/Washington	A	2.4
26	Washington/Pomona	A	2.3
27	Washington/Curtis	A	1.4
28	Portland/Key Route	B	6.2
29	Thousand Oaks/Key Route	B	5.1
30	Masonic/Brighton	A	2.3
31	Brighton/Spokane	A	0.6

[1] Level of Service for signalized intersections
[2] Average stopped delay per vehicle for all intersection approaches

In order to fit these improvements into the existing right-of-way, the number of through lanes in each direction is reduced from two to one. The signalized intersections of Marin Avenue with San Pablo Avenue, Santa Fe Avenue and Masonic Avenue carry the highest volumes of traffic on Marin Avenue and are most likely to be bottlenecks to through traffic flow. These intersections were evaluated using the "SYNCHRO" program to determine the effects of the proposed TMP measures on signalized intersections on arterials with coordinated signals.

Various potential lane configurations were considered on Marin Avenue to identify their ability to adequately serve projected traffic demand. In order to prevent left turning vehicles from blocking through traffic it is necessary to provide separate left turn lanes at intersections. This eliminates the possibility of installing wide medians on Marin Avenue without left turn pockets. Future right turn volumes at the intersection of Marin Avenue and Santa Fe Avenue require the inclusion of a right turn lane on Marin Avenue. This provides a deceleration lane where vehicles slowing to turn right onto Santa Fe Avenue would not obstruct through traffic on Marin Avenue. In order to provide these right turn lanes there can be no curb extensions or parking on Marin Avenue on the upstream approach to the intersection. With the provision of left turn and right turn lanes at signalized intersections on Marin Avenue a single through lane in each direction will be adequate to serve the projected through traffic demand. *(For further clarification on City Council direction, see City Council Resolution #00-32.)*

The resulting level of service and delay for each intersection is summarized in Table 4.7 for the AM peak hour and Table 4.8 for the PM peak hour. These levels of service are based on the existing lane configurations on the cross streets and one left turn lane, one through lane, and one right turn lane on Marin Avenue. This eliminates Option 3 (*Figure 6.5*) and Option 7 (*Figure 6.9*) from consideration since these alternatives do not allow for separate left turn lanes. The configurations at the Marin/San Pablo intersection are not changed by any of the proposed measures. Thus, the Level of Service at that intersection remains unchanged.

Even with the proposed measures in place, the intersection of Marin Avenue/San Pablo Avenue continues to operate at Level of Service E. This intersection is part of the coordinated signal system on San Pablo Avenue, which is controlled by Caltrans. The flow of traffic on Marin Avenue through this intersection cannot be improved without adversely affecting San Pablo Avenue.

Table 4.7 Intersection Level of Service Summary Table - AM Peak Hour						
Intersection	Existing		Year 2010			
			No Project		With Project	
	LOS [1]	Delay [2]	LOS	Delay	LOS	Delay
Marin/San Pablo	D	27.7	D	32.0	D	32.0
Marin/Masonic	B	7.0	B	7.0	C	20.0
Marin/Santa Fe	B	7.4	B	9.0	C	16.0

[1] Level of Service
[2] Average stopped delay per vehicle for all intersection approaches

Table 4.8 Intersection Level of Service Summary Table - PM Peak Hour						
Intersection	Existing		Year 2010			
			No Project		With Project	
	LOS [1]	Delay [2]	LOS	Delay	LOS	Delay
Marin/San Pablo	D	28.4	E	47.0	E	47.0
Marin/Masonic	A	5.0	A	5.0	D	26.0
Marin/Santa Fe	B	10.1	C	16.0	C	23.0

[1] Level of Service
[2] Average stopped delay per vehicle for all intersection approaches

The upper threshold of Level of Service E represents an intersection volume to capacity ratio of 1.0. The through traffic volume capacity on Marin Avenue for a given intersection to operate at Level of Service E is constrained by the intersection configuration and the volume of traffic on the cross street. The through volume capacity for Marin Avenue at each of these signalized intersections has been calculated and summarized in Table 4.9 for the AM peak hour, Table 4.10 for the PM hour, and in *Figures 4.13* through *4.16*. In all cases, the projected demand is less than the available capacity. Thus, Marin Avenue would have the capacity to serve the projected through traffic demand with the proposed Traffic Management Plan measures and results in conditions that are unlikely to divert traffic on to parallel routes. *(For further clarification on City Council direction, see City Council Resolution #00-32.)*

Table 4.9 AM Peak Hour Through Capacity at Signalized Intersections on Marin Avenue				
Intersection	Year 2010			
	No Project		With Project	
	Demand	Capacity	Demand	Capacity
Marin/San Pablo	1,228	1,875	1,228	1,875
Marin/Masonic	1,513	2,690	1,513	1,970
Marin/Santa Fe	1,490	2,360	1,490	2,200

Table 4.10 PM Peak Hour Through Capacity at Signalized Intersections on Marin Avenue				
Intersection	Year 2010			
	No Project		With Project	
	Demand	Capacity	Demand	Capacity
Marin/San Pablo	1,955	2,708	1,955	2,708
Marin/Masonic	1,643	2,950	1,643	1,970
Marin/Santa Fe	1,752	2,260	1,752	2,060

4.3 Specific Issues and Data Findings for Neighborhood Areas 1, 2, and 3

In Appendix A, detailed profiles of neighborhood issues are available, which document issues raised in Working Group meetings and in meetings with Traffic and Safety Commissioners, as well as in City documents provided by staff for consultant review. In addition, Appendix G includes a table of *Specific Issues and Major Data Findings for Neighborhood Areas 1, 2, and 3.* This table provides a synopsis of the issues and major data findings associated with each issue studied.

Some clearly affected corridors and locations emerged in the traffic analysis of each neighborhood area's concerns:

1) Marin Avenue clearly has the greatest number of concerns which traffic studies have validated, including vehicles exceeding the speed limit, difficult pedestrian crossings, volumes (especially through volumes), proximity to school routes, and accidents.

2) Buchanan Street has a similar pattern of validated concerns as Marin Avenue.

3) San Pablo Avenue also has a relatively large number of validated concerns (with the exception of speeding, which was not observed at the 85th percentile).

4) Santa Fe Avenue, Masonic Avenue, and Brighton Avenue were also observed as having a number of validated concerns, particularly regarding accidents and vehicular speeds.

As noted in the discussion of prioritization of local neighborhood Area issues, discussed in Section 6.0, below, there were many other locations with valid concerns. These are noted, prioritized, and addressed in the Recommended Actions, also discussed in Section 6.0.

Table 4.11 Intersection Level of Service Summary Table - AM Peak Hour

No.	Signalized Intersection	Existing		Year 2010	
				No Project	
		LOS[1]	Delay[2]	LOS	Delay
1	Buchanan/Jackson	B	10.3	B	10.2
2	San Pablo/Marin	D	27.7	D	32.0
3	Marin/Masonic	B	7.0	B	7.0
4	Santa Fe/Marin	B	7.4	B	9.0
5	Marin/Peralta	B	5.3	A	3.0
6	San Pablo/Solano	B	11.5	B	13.0
7	Masonic/Solano	B	9.0	B	11.0
8	Solano/Santa Fe	B	8.9	B	9.3
9	Washington/San Pablo	A	5.2	B	5.6
10	Brighton/San Pablo	B	6.0	B	6.0
	Unsignalized Intersection				
11	Dartmouth/Talbot	A	1.5	A	1.5
12	Santa Fe/Key Route	A	0.5	A	0.5
13	Santa Fe/Pomona	A	0.8	A	0.8
14	Santa Fe/Ramona	A	0.9	A	0.9
15	Marin/Cornell	A	0.8	A	0.8
16	Marin/Talbot	A	0.5	A	0.5
17	Marin/Ramona	A	0.9	A	1.0
18	Cleveland/Johnson	A	0.2	A	0.2
19	Cleveland/Solano	A	1.0	A	1.0
20	Jackson/Solano	B	7.5	B	10.5
21	Kains/Solano	B	0.8	A	0.9
22	Solano/Curtis	A	1.0	A	0.9
23	Washington/Cleveland	A	0.2	A	0.2
24	Washington/Pierce	A	0.7	A	0.7
25	San Pablo/Washington	A	0.6	A	0.5
26	Washington/Pomona	A	2.6	A	2.6
27	Washington/Curtis	A	1.8	A	1.7
28	Portland/Key Route	C	10.5	C	11.1
29	Thousand Oaks/Key Route	B	7.8	B	7.1
30	Masonic/Brighton	A	1.2	A	1.2
31	Brighton/Spokane	A	1.0	A	0.9

[1] Level of Service for signalized intersections

[2] Average stopped delay per vehicle for all intersection approaches

Table 4.12 Intersection Level of Service Summary Table - PM Peak Hour					
No.	Signalized Intersection	Existing		Year 2010	
				No Project	
		LOS[1]	Delay[2]	LOS	Delay
1	Buchanan/Jackson	B	10.2	B	10.6
2	San Pablo/Marin	D	28.4	E	47.0
3	Marin/Masonic	A	5.0	A	5.0
4	Santa Fe/Marin	B	10.1	C	16.0
5	Marin/Peralta	B	5.6	B	11.0
6	San Pablo/Solano	B	11.4	C	16.0
07	Masonic/Solano	B	11.0	C	16.0
8	Solano/Santa Fe	B	9.3	B	9.8
9	Washington/San Pablo	A	4.0	A	4.2
10	Brighton/San Pablo	B	6.0	A	5.0
	Unsignalized Intersection				
11	Dartmouth/Talbot	A	1.5	A	1.5
12	Santa Fe/Key Route	A	0.3	A	0.3
13	Santa Fe/Pomona	A	0.5	A	0.5
14	Santa Fe/Ramona	A	0.4	A	0.4
15	Marin/Cornell	A	1.3	A	1.3
16	Marin/Talbot	A	1.4	A	1.5
17	Marin/Ramona	A	1.4	A	1.6
18	Cleveland/Johnson	A	0.1	A	0.1
19	Cleveland/Solano	A	1.0	A	1.0
20	Jackson/Solano	B	6.2	B	8.6
21	Kains/Solano	A	0.9	A	1.0
22	Solano/Curtis	A	1.9	A	1.9
23	Washington/Cleveland	A	0.3	A	0.3
24	Washington/Pierce	A	0.9	A	0.9
25	San Pablo/Washington	A	2.4	A	1.7
26	Washington/Pomona	A	2.3	A	2.3
27	Washington/Curtis	A	1.4	A	1.4
28	Portland/Key Route	B	6.2	B	6.2
29	Thousand Oaks/Key Route	B	5.1	A	5.0
30	Masonic/Brighton	A	2.3	A	2.1
31	Brighton/Spokane	A	0.6	A	0.6

[1] Level of Service for signalized intersections

[2] Average stopped delay per vehicle for all intersection approaches